


CAI

IA700

-G51



3 1761 11557641 5



Digitized by the Internet Archive
in 2022 with funding from
University of Toronto

<https://archive.org/details/31761115576415>



Advisory Committee
Northern Development

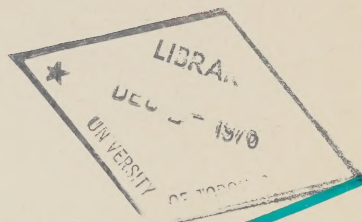
Comité consultatif
mise en valeur du Nord

North of 60°

Au nord du 60°

1975

6



1975 - 76 Government Activities in the North

1975-1976 Government Activities in the North

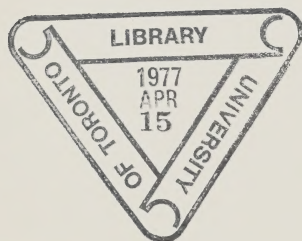
1975-76 Report and 1976-77 Plans

Advisory Committee
on Northern Development

Cette publication existe aussi
en version française

Document ND-528

Information Services,
Department of Indian Affairs and Northern
Development, Ottawa, Ontario K1A 0H4



Introduction

I am pleased to introduce the 1975-76 edition of *Government Activities in the North*. This publication is produced annually in both Official Languages by the Advisory Committee on Northern Development which has been directed by Cabinet to report periodically on all phases of development in the Canadian North. The report provides a comprehensive review of the Federal and Territorial Government's activities in the Yukon and Northwest Territories. This publication is particularly useful as a reference source because of increasing interest in the Canadian North in Canada and in other nations.

The report reviews the activities of each department and agency under the titles: Responsibilities, Review of 1975-76, Plans for 1976-77 and Long-term Plans. Most of the material was assembled late in 1975-76; therefore, at date of publication, some plans may have been completed and others modified.

I would like to take this opportunity to draw attention to a new publication called *Annual Northern Expenditure Plan 1976-77*. Those wishing information on government expenditures in the North will be interested in this companion publication, which is available from the Department.

As Minister responsible for planning and coordination of policies and programs North of 60°, I wish to thank all departments and agencies and the territorial governments who contributed to this report. I hope this publication will enhance the public's understanding of Federal and Territorial Government activities in the Yukon and Northwest Territories.



Warren Allmand,
*Minister of Indian Affairs
and Northern Development*
Ottawa, October 1976

Table of Contents

| | | |
|--|--|--|
| Advisory Committee on Northern Development (ACND) 9 | Department of Manpower & Immigration (M&I) 126 | Transport Canada (MOT) 165 |
| Agriculture Canada (AC) 13 | Canada Manpower Training Program 127 | Arctic Transportation Agency 165 |
| Canadian Broadcasting Corporation (CBC) 15 | Canada Manpower Mobility Program 128 | Canadian Air Transportation Administration 165 |
| Canadian National Railways (CNR) 28 | Department of National Defence (DND) 131 | Canadian Surface Transportation Administration 172 |
| Canadian Transport Commission (CTC) 30 | Canadian Forces 131 | Transportation Development Agency 174 |
| Central Mortgage and Housing Corporation (CMHC) 31 | Chief of Research and Development Branch 133 | Unemployment Insurance Commission (UIC) 176 |
| Common Assets Disposal Corporation (CAD) 32 | Research Contracts 1975-76 136 | |
| Department of Communications (DOC) 33 | Extramural Grants 136 | Government of the Northwest Territories 177 |
| Department of Energy, Mines and Resources (EMR) 38 | Department of National Health and Welfare (NH&W) 138 | Council of the NWT 179 |
| Canada Centre for Mineral and Energy Technology 38 | Health 138 | Department of Economic Development 182 |
| Surveys and Mapping Branch 38 | Welfare 142 | Department of Education 185 |
| Earth Physics Branch 43 | Department of National Revenue (Revenue Canada) 145 | Department of Finance 188 |
| Canada Centre for Remote Sensing 47 | Department of Public Works (DPW) 146 | Department of Information 189 |
| Resource Management and Conservation Branch 48 | Western Region 146 | Department of Local Government 191 |
| Mineral Development Sector 48 | Pacific Region 148 | Department of Natural and Cultural Affairs 192 |
| Geological Survey of Canada 49 | National Energy Board (NEB) 150 | Department of Personnel 194 |
| Polar Continental Shelf Project 54 | National Film Board (NFB) 151 | Department of Planning and Program Evaluation 196 |
| Department of the Environment (DOE) 65 | National Museums of Canada (NMC) 153 | Department of Public Services 197 |
| Atmospheric Environment Service 65 | National Museum of Man 153 | Department of Public Works 198 |
| Environmental Protection Service 69 | National Museum of Natural Sciences 155 | Department of Social Development 200 |
| Environmental Management Service 72 | National Research Council (NRC) 158 | Northwest Territories Housing Corporation 201 |
| Fisheries and Marine Service 80 | Northern Canada Power Commission (NCPC) 160 | Government of the Yukon Territory 203 |
| Planning and Finance Service 85 | Northern Transportation Company Limited (NTCL) 161 | Administration of the Yukon Territory 205 |
| Department of External Affairs (EA) 87 | Post Office Department (PO) 162 | Council of the Yukon Territory 205 |
| Department of Indian Affairs and Northern Development (DIAND) 89 | Royal Canadian Mounted Police (RCMP) 163 | Administrative and Legislative Support Services 205 |
| Indian and Eskimo Affairs Program 89 | Statistics Canada (SC) 164 | Department of Treasury 209 |
| Parks Canada 92 | | Department of Education 210 |
| Northern Affairs Program 96 | | Department of Territorial Secretary and Registrar General 212 |
| Department of Justice (JUS) 122 | | Department of Health, Welfare and Rehabilitation 214 |
| Department of Labour (LAB) 123 | | Department of Local Government 219 |
| | | Department of Tourism, Conservation and Information Services 220 |
| | | Department of Highways and Public Works 224 |
| | | Department of Liquor Control 225 |
| | | Yukon Housing Corporation 226 |

Federal
Departments,
and Agencies

Advisory Committee on Northern Development (ACND)

Responsibilities

To provide the interdepartmental mechanism for joint planning and co-ordination of all federal policies and programs applicable to the North, including joint consideration of their financial implications; and to advise the government on these matters through the Minister of Indian Affairs and Northern Development.

Review of 1975-76

The ACND, as a structure of specialist committees with sectoral responsibilities, continued in operation throughout the year in the following areas:

Policy Committee

Chairman: Mr. A. Kroeger,
Department of Indian Affairs
and Northern Development

The Policy Committee consists of Deputy Ministers or Assistant Deputy Ministers, as alternates, to deal with matters of a conceptual or policy nature relating to overall northern development.

General Committee

Chairman: Mr. G. S. Murray,
Department of Indian Affairs
and Northern Development

Terms of Reference

To propose specific programs for the development of the northern territories in order to co-ordinate these programs into a general plan.

To consider and advise on all proposed programs and studies which may have a major bearing on the development of the northern territories.

Where required, to establish ad hoc working groups to consider particular aspects of northern development.

To circulate relevant information and to advise senior officers of those departments and agencies with northern interests on those aspects of northern development discussed in committee.

Working Groups

Financial Implications of the Northern Development Policy;
Post-Operational Phase DEW Line;
Strathcona Sound Project;
Arvik Mine Project;
Beaufort-Delta Oil Pipeline Review Group;
Working Group on Cost Allocation of Socio-economic and Environmental Studies Related to Major Natural Resource Development Proposals.

Additionally, a seminar was held and task groups established to examine the implications of monitoring and surveillance requirements in the event of construction of a pipeline in the Mackenzie Valley.

Transportation Committee

Chairman: Mr. M. Hagglund,
Transport Canada

Terms of Reference

To review, examine, and report on transportation requirements in all its forms for the northern territories.

To submit both short- and long-term plans for transportation in the North, including recommendations in which these shall be met.

Policy Group

Steering Group
Marine Transport.

Working Groups

Eastern Arctic Resupply;
Collapsible Containers;
Keewatin Resupply Tariff.

Committee on Science and Technology

Chairman: Dr. J. D. Keys,
National Research Council of Canada

Terms of Reference

To discuss and exchange information on the research programs and projects, active or planned, of government and other agencies in northern Canada, and to consider the trends of northern research in other countries and their effect on Canadian programs.

To release through the Advisory Committee on Northern Development, periodically, a list of all these research programs and projects including a forecast of any plans for future work, for the information of the Committee and other government agencies.

To recommend to the Advisory Committee on Northern Development additional research when this is considered to be desirable.

To assist, at the request of interested departments, in providing or improving upon transportation or other facilities needed to further research programs in the North.

To consider the possibility of common use of the research facilities of government departments and agencies.

To consider any other aspect of research in the Canadian North as may be referred to it by the Advisory Committee on Northern Development.

To consider and advise on all federal research programs pertaining to the North, with the view that the programs be appropriately related to the Federal Government's overall development plans in the North.

Executive Group

Standing Committee on Research Projects
Task Force on Construction in Permafrost Regions.

Working Groups

Canada-USSR Scientific Agreement (General Exchanges Agreement); Scientific Guidelines for Federally-Sponsored Scientific Activities in Northern Canada;

Scientific Facilities in the North; International Polar Organizations.

Ad Hoc

Arctic Bibliographic Information System; Canada/U.K. Cooperation in Arctic Research.

Committee on Northern Communications

Chairman: Mr. A. Lapointe,
Department of Communications

Terms of Reference

To advise the government, through the Advisory Committee on Northern Development, on questions of policy relating to civilian and military communications undertakings in northern Canada.

To provide for the effective co-ordination of all government communications activities in northern Canada including responsibility for making recommendations on priorities between competing government programs.

To review and assess, where appropriate, on-going government communications programs in northern Canada to assist departments and agencies in meeting the objectives of the Policy for Northern Communications and the Northern Development Policy, 1971-1981.

To initiate, where appropriate, studies to evaluate possible policy changes or new program developments in northern communication in order to keep pace with new technology, taking into account social and cultural concerns, and to ensure compatibility with changing northern needs.

Working Groups

Radio Broadcasting;
Yukon Communications Study.

Committee on the Employment of Native Northerners

Chairman: Mr. J. T. Fournier,
Department of Indian Affairs
and Northern Development

Terms of Reference

To review the nature of the requirement for factual data on the representation of Native Northerners in the northern work force; correlate the preparation of data currently being provided, and provide information, guidance and assistance in the development of procedures to meet current and future employment data requirements.

To develop an overview of training programs in effect to equip Native Northerners for employment opportunities, and make recommendations on new or modified programs that may be required to meet changing employment opportunities.

To identify the legal, administrative and other impediments, where they exist, to the implementation of government objectives in the field of employment and economic opportunities for Native Northerners and make recommendations for their removal.

To consider innovative approaches to the employment problems of Native Northerners, based on experience in Canadian and other jurisdictions.

To encourage government departments and Crown agencies to undertake, either individually or jointly, special employment programs for Native Northerners.

To ensure consultation with representative native organizations as a process in the development of employment programs.

Working Groups

Employment and Local Impact of the Mackenzie Highway Project;
Aesthetic Pollution in the Arctic (pro tem).

Environmental Committee of the Mackenzie Highway

Chairman: Mr. L. Edgeworth,
Department of the Environment

Terms of Reference

This committee was inactive owing to the moratorium placed on continued construction of the Mackenzie Highway.

Federal-Territorial Economic Planning Committee

Chairman: Mr. E. M. R. Cotterill,
Department of Indian Affairs
and Northern Development

Terms of Reference

To establish guidelines for global and regional economic planning in the North to be undertaken by the Federal and Territorial Governments in accordance with the objectives and priorities in the Northern Policy.

To ensure that there is an adequate information base concerning the North and matters affecting its development to enable governments to measure the impact of programs and to undertake the required economic planning.

To develop and initiate effective operations for the stimulation and support of sound enterprises to encourage industrial growth.

To establish guidelines for programs to enhance economic opportunities and social advantages for native people and to ensure that their views are taken into account.

To examine the possible applications of development boards and corporations, and to initiate effective action on such structures which may be appropriate to the Territories.

Interdepartmental Advisory Committee on Northern Roads

Chairman: Mr. A. B. Yates,
Department of Indian Affairs
and Northern Development

Terms of Reference

To assess and advance proposals for specific area development roads.

To be responsible for reviewing the economic assessment of each sector and assessing the relative value of all road classifications referred to in the Northern Roads Policy.

Working Group

Mackenzie Highway Committee.

Northwest Territories Co-ordinating Committee

Chairman: Mr. S. M. Hodgson,
Commissioner of the Northwest Territories

Terms of Reference

To provide a forum for the exchange of information regarding on-going governmental programs in the Northwest Territories.

To provide a forum to which proposed new programs may be submitted for purposes of information and co-ordination.

To identify overlapping areas of jurisdiction and programs, and co-ordinate all government programs in order to avoid the duplication of effort.

To identify and attempt to resolve areas of program conflict or incompatibility.

To identify needs which are not being met by any private or governmental agency and propose new programs and policies to meet those needs.

To identify ineffective on-going programs and make recommendations for their improvement.

In the event of conflicting interests which cannot be resolved by the sub-committee, the matter will be referred to the Advisory Committee on Northern Development.

Working Groups

Standing Group on Construction;

Standing Group on Emergency Operations;

Standing Group on Personnel Policy and Programs;

Standing Committee on Resource Management;

Standing Group on Transportation and Communications.

Federal Interdepartmental Co-ordinating Committee – Whitehorse

Chairman: Mr. A. Pearson,
Commissioner of the Yukon Territory

Terms of Reference

This committee shall meet regularly to discuss matters of common interest, and where possible seek a common solution at that level. Each department or agency of the Government in the Yukon will be invited to nominate its representative. Minutes of these meetings will be prepared and distributed to these representatives in the Yukon.

In the event of conflicting interests which cannot be resolved by the Committee, the matter will be referred to the Chairman of the ACND who will discuss it with the appropriate deputy minister in Ottawa or, if needed, refer the matter to the ACND for a recommendation.

Steering Committee

Working Groups

Sub-Committee on Communications;
Staff Housing.

Advisory Committee on Industrial Benefits from Natural Resource Development

Chairman: Mr. G. E. Hughes-Adams,
Department of Industry, Trade and Commerce

This Committee was established in March 1974 by agreement of the Assistant Deputy Ministers of the Department of Indian Affairs and Northern Development (Northern Affairs Program) and Energy, Mines and Resources (Energy Development).

Terms of Reference

"Committee of government experts to advise the Departments of Indian Affairs and Northern Development; Energy, Mines and Resources; and Industry, Trade and Commerce, on the increasing of industrial benefits to Canada to the

maximum extent practicable from the exploration for and exploitation of natural resources on Canada Lands in keeping with the following objectives:

- increased sourcing of equipment and services in Canada emphasizing those with a substantial level of technological and innovative input by Canadians with a view to encouraging firms in Canada with independent, ongoing capabilities;
- production of these services and equipment on an internationally competitive basis;
- increase the participation of firms beneficially owned and controlled by Canadians;
- encourage industrial activity in the disparate regions of Canada;
- encourage resource companies to rationalize their sourcing by purchasing in Canada for their world operations."

"Canada Lands" are defined in section 2 (d) of the Canada Oil and Gas Land Regulations to mean:

- territorial lands as defined in the Territorial Lands Act; and
- public lands as defined in the Public Lands Grants Act for sale, lease or other disposition of which there is no provision in the law, and includes land under water.

Mackenzie Delta Development Committee

Chairman: Mr. F. J. Joyce,
Department of Indian Affairs
and Northern Development

Terms of Reference

To evaluate the socio-economic, technical, and environmental aspects of the application for the construction of a gas gathering system in the Mackenzie Delta.

Federal-Territorial Regional Planning Committee

Co-Chairmen:

Mr. A. B. Yates,
Department of Indian Affairs
and Northern Development;
Mr. L. Elkin,
Government of the Northwest
Territories

Terms of Reference (as proposed)

To recommend the preparation of a development plan to cope with the impact of development in the Mackenzie Delta in a manner consistent with the Federal Government's National Objectives for the North and its priorities for the 1970's and with the Territorial Governments's objectives and priorities.

To recommend measures dealing with land use, infrastructure and government services required to implement a Delta Regional Plan.

To establish appropriate consultation mechanisms to provide for participation on the part of the people to be served by the Plan.

To select and assign projects necessary for the preparation of such a plan, and to integrate project results into the Plan.

To recommend the structure, nature, level and allocation of funds to put into effect the Regional Plan.

Responsibilities

provide technical assistance through consultation and research to those in the north needing information on matters relating with food production; provide an identification and consultation service for insects, arachnids, nematodes and plants in the North; and provide technical expertise on soil and vegetation surveys in the North.

Northern Research Group, Peaverville, Alberta

Review of 1975-76

Field work for the assessment of the agricultural production potential for the Slave River Lowlands area of the Northwest Territories was terminated. This area of 2,000 ha. is approximately half open sedge grass meadows varying in degree of wetness. Plot areas were established in the vicinity of Grand Detour on two sedge soils; Taltson and Grand Detour, and on one forested soil; Slave. On these three types, which represent over 40 per cent of the land surface, the adaptability for forage crops, cereal crops, and the need for additional fertilizer on both native and cultivated stands was determined. Climate recordings for June, July and August were found to vary significantly from one year to the next, particularly for rainfall and soil temperature. Precipitation for the three summer months varied from 9.9 cm in 1971 to 23.34 cm in 1973. During July, in four years out of seven, killing frosts were recorded. In 1972, there were no separate days in July when the temperature dropped below -2.2°C . On the sedge soils the temperature at 10 cm below the surface did not exceed 12°C and frost often remained in the ground at 10 cm until early July.

A study of the soils showed that the poorly drained Grand Detour complex of Gleysols were saline to very saline. It was estimated that about 10 per cent of the soils in the lowlands have electrical conductivities exceeding 10 mmhos/cm in the surface 20 cm. Indications are that sodium is the prevalent cation and that it is present in some soils in amounts sufficient to limit agricultural production. It was shown that surface disturbance, as in land preparation for

cropping, increases salinity in the surface layers of soil thus reducing the potentially arable area to those soil types in which concentration of salts is much lower. It was also shown that soils of the Grand Detour type on the west side of the Slave River had higher EC, more Na, Ca, Mg, SO_4 , and Cl than the same type on the east side of the river.

Yield of native forage from a sedge grass mixture over a four year period averaged 2490 kg/ha. A pure sedge stand averaged 3637 kg/ha. Yield ranged from 1284 to 5719 kg/ha for the three sites with the highest being recorded in 1971 and the lowest in 1973. Protein content of the forage diminished as the season advanced, for sedge 10.5-9.4, for sedge grass 10.7-7.6 and for grass 7.5-5.5. The years with highest rainfall appeared to produce the lowest protein content. A single application of 250 kg/ha nitrogen increased production by 30 per cent over a three year period. This treatment also increased protein content of the native vegetation by 3 per cent up to two years following application. Native stands when cut continuously diminished in total yield, but did not change appreciably in species composition.

The best adapted forages were brome-grass, wheat grass and alfalfa. Cereals were not able to survive the summer frosts and ripe grain never reached the mature stage of growth. Yield of Carlton brome-grass: rambler alfalfa with no additional fertilizer gave a three year average of 4080, 2460 kg/ha for the Taltson, Grand Detour and Slave soils respectively. The Taltson plots benefited from additional P giving an additional 1000 kg/ha for 200 kg of P_2O_5 . However, P in the forage remained at a low level. The Grand Detour plots were increased by 1000 kg/ha for 200 N and 100 P_2O_5 kg/ha. Slave soil plots showed only minimal increase from fertilizer application. On all three sites alfalfa diminished in the stand and by the end of the fourth year brome-grass was predominant.

The most limiting element to livestock nutrition particularly in late cut forage for both native and cultivated species was P which was rarely found above the required 0.2 per cent. Copper content of native material was found to be questionably adequate.

Records of productivity from this study are now being used to compare the agricultural potential with the value of bison to the local economy.

Assistance was provided to the soil survey of the Liard River Valley in determining the potential for grazing domestic animals. The area from Fort Liard to Fort Simpson along the Liard River was checked and it was found that there is very little or no potential range in the valley. The tree canopy at low elevation is very well developed and little grazeable vegetation grows under the aspen. At mid-elevation under mixed-wood, alder forms an impenetrable barrier while at higher elevation black spruce, larch and moss predominate in a mixture of small boggy basins alternating with sandy pine ridges. Some native grasses and sedges which could provide a small amount of interim range grow along seismic lines and in man-made clearings. The forest tends to fill in burns and man-made openings rapidly, hence grazing values are very limited. In any area that is as dominated by tree cover, such as is found in the Liard Basin, hardly any native grazing will be found for domestic stock.

Plans for 1976-77

Data from the Slave River Lowland program will be analyzed in detail. Co-operation with the governments of both the Yukon and the Northwest Territories will be maintained with respect to land use and agricultural production.

Biosystematics Research Institute, Ottawa, Ontario

Review of 1975-76

The Institute continued to provide an identification service on insects, arachnids, nematodes, vascular plants and fungi for various government agencies and universities operating in the North. Approximately 500 vascular plants from the Nahanni National Park and 40,000 insects, arachnids and nematodes from the Mackenzie and Porcupine River systems were included in the identification for Environment Canada.

One research scientist investigated the insects and vascular plants of the Kuujjua River Valley (71°N, 114°W), Victoria Island. Preliminary evaluation of several groups of insects has shown that this interior valley supports a fauna 1½–2 times that of Lake Hazen, Ellesmere Island and about half that of Tuktoyaktuk.

A manuscript on *The Flora of Continental Northwest Territories* is essentially complete. It will include keys and descriptions of approximately 1,300 species of flowering plants. A paper on the chironomids of Char Lake, Cornwallis Island was accepted for publication.

Plans for 1976–77

The Institute will continue to provide an identification service on insects, arachnids, nematodes, vascular plants, and fungi as required by government agencies and universities operating in the North.

Two research scientists plan to spend about one month collecting beetles and other insects in the Yukon Territory. Research will continue on the chironomids and nematodes living in the Mackenzie and Porcupine River systems including preparation of a key to chironomid larvae (about 200 species) and descriptions of about 20 species of nematode parasites of insects.

Soil Research Institute, Ottawa

Review of 1975–76

The Institute continued its contribution of technical information and expertise to northern projects. In an effort to formulate an agricultural policy for the Northwest Territories, one soil surveyor spent two weeks on a reconnaissance soil survey in the Liard River Valley from Fort Simpson to Fort Liard. (See also the preceding report on the grazing potential of this area.)

At the request of the Geological Survey of Canada one soil surveyor and assistant conducted an exploratory biophysical survey in certain arctic islands to assist in delineating a pipeline corridor.

Following the International Soil Science Congress at Edmonton in 1978 several tours are being arranged to show visitors typical soils of Canada. One such tour will visit the Yukon and Northwest Territories. In preparation, two scientists spent a week selecting suitable sites.

The Institute member seconded to DIAND last year to advise on the formulation of an agricultural policy for the North continued this assignment during the year.

Plans for 1976–77

Further reconnaissance soil surveys in selected portions of the Yukon Territory are planned. This will be done in concert with DIAND and with the co-operation of a range ecologist from the Northern Research Group, Beaverlodge. The objective is to help formulate a northern agricultural policy.

Co-operative surveys with the Geological Survey of Canada in the Arctic Islands will continue.

Canadian Broadcasting Corporation (CBC)

Northern Service Radio Stations

| | |
|----------------------|----------------|
| Frobisher, NWT | 1210 kHz/250W |
| Whitehorse, YT | 570 kHz/1000W |
| Fort Churchill, Man. | 1230 kHz/250W |
| Yellowknife, NWT | 1340 kHz/1000W |
| Inuvik, NWT | 860 kHz/1000W |

Northern Service Low-Power Delay Transmitter Stations (LPRT'S)

| | |
|---|--------------|
| Frobisher is the program centre for the Frobisher LPRT** Network. | |
| Whitehorse | 990 kHz/40W |
| Yellowknife | 1230 kHz/40W |
| Whitehorse | 560 kHz/40W |
| Whitehorse | 560 kHz/40W |
| Whitehorse | 560 kHz/40W |
| Whitehorse | 990 kHz/40W |
| Whitehorse | 940 kHz/40W |
| Whitehorse | 970 kHz/40W |
| Whitehorse | 990 kHz/40W |
| Whitehorse | 1340 kHz/40W |
| Whitehorse | 860 kHz/40W |
| Whitehorse | 940 kHz/40W |
| Whitehorse | 690 kHz/40W |
| Whitehorse | 1230 kHz/40W |
| Whitehorse | 990 kHz/40W |

Whitehorse is the program centre for the Mackenzie LPRT** Network.

| | |
|------------|--------------|
| Whitehorse | 1490 kHz/40W |
| Whitehorse | 860 kHz/40W |
| Whitehorse | 1450 kHz/40W |
| Whitehorse | 1230 kHz/40W |
| Whitehorse | 690 kHz/40W |
| Whitehorse | 1150 kHz/40W |
| Whitehorse | 1280 kHz/40W |
| Whitehorse | 1200 kHz/40W |
| Whitehorse | 880 kHz/40W |

Inuvik is the program centre for the Alta LPRT** Network.

| | |
|------------|--------------|
| Whitehorse | 990 kHz/40W |
| Whitehorse | 920 kHz/40W |
| Whitehorse | 1230 kHz/40W |
| Whitehorse | 920 kHz/40W |
| Whitehorse | 680 kHz/40W |

Whitehorse (600 kHz/1000W) is an affiliate.

Northern Service Radio Stations fed by Satellite from Program Centres at Frobisher, Yellowknife and Inuvik

| | |
|-------------------------------|-------------------|
| Rankin Inlet* | 1160 kHz/40W |
| On-air date: January 14, 1974 | |
| Cape Dorset | FM 105.1 mHz/100W |
| On-air date: October 23, 1975 | |
| Igloolik* | FM 105.1 mHz/100W |
| On-air date: October 23, 1975 | |
| Pangnirtung | FM 105.1 mHz/100W |
| On-air date: October 23, 1975 | |
| Eskimo Point* | FM 105.1 mHz/100W |
| On-air date: October 24, 1975 | |
| Pond Inlet | FM 105.1 mHz/100W |
| On-air date: October 15, 1975 | |
| Resolute | FM 105.1 mHz/100W |
| On-air date: October 15, 1975 | |
| Cambridge Bay | FM 105.1 mHz/100W |
| On-air date: October 31, 1975 | |
| Coppermine | FM 105.1 mHz/100W |
| On-air date: October 31, 1975 | |
| Baker Lake | |
| FM Station is an affiliate | |

* Community Access.

**Unattended radio stations broadcasting from the Network.

Northern Service Television Stations Fed by Satellite

| | (Channel) |
|--------------------------------|--------------|
| Yellowknife | CFYK-TV 8 |
| Whitehorse | CFWH-TV 6 |
| Uranium City (Sask.) | CBKAT 8 |
| Watson Lake | CBDAT 8 |
| Churchill | CHFC-TV 8 |
| Cassiar | CBUET 7 |
| Pine Point | CBEBT 4 |
| Inuvik | CHAK-TV 6 |
| Dawson | CBDDT 7 |
| Clinton Creek | CBDDT 8 |
| Keno | CBKHT 13 |
| Elsa | CBKHT-1 9 |
| Mayo | CBKHT-2 7 |
| Fort Smith | CBEAT 8 |
| Faro | CBDBT 8 |
| Rankin Inlet | CBECT 9 |
| Frobisher | CFFB-TV 8 |
| Norman Wells | CBEDT 9 |
| Fort Simpson | CBEGT 9 |
| Fort McPherson | CHAK-TV-1 13 |
| Cape Dorset | CBEJT 9 |
| On-air date: October 23, 1975 | |
| Pangnirtung | CBEKT 9 |
| On-air date: October 23, 1975 | |
| Baker Lake | CBEIT 9 |
| On-air date: October 24, 1975 | |
| Eskimo Point | CBEHT 9 |
| On-air date: October 24, 1975 | |
| Pond Inlet | CBELT 9 |
| On-air date: October 15, 1975 | |
| Resolute | CBEMT 9 |
| On-air date: October 15, 1975 | |
| Cambridge Bay | CBENT 9 |
| On-air date: October 31, 1975 | |
| Coppermine | CBEOT 9 |
| On-air date: October 31, 1975 | |
| Hay River | CBEBT-1 7 |
| On-air date: December 17, 1975 | |

Note: Program titles appearing in italics are Northern Service radio or TV programs – *Nallachine*. Program titles appearing in italics with quotations are CBC National Network Programs – *"Sunny Days"*.

Northern Service

Responsibilities

To provide a broadcasting service which will meet the special needs of the people living in the North – native and non-native.

To give Northerners a sense of identity with the rest of Canada and an awareness of the needs they share with Canadians living in all parts of the country and to inform the rest of Canada about the people of the North and developments there.

Since its establishment in 1958, the CBC Northern Service has met these responsibilities through radio programs on the AM broadcast band, the FM broadcast band, the shortwave band and, to an increasing extent, through television.

Review of 1975–76

In 1975–76, the Northern Service was able to further develop its radio news operations with the addition of personnel in Whitehorse and Inuvik. Plans to develop a newsroom for the Eastern Arctic at Frobisher had to be delayed because of a housing shortage in that community. These plans will be implemented next year.

The Northern Service encourages development of broadcasting at the community level by providing air time on its LPRTs to representative community broadcasting societies, by giving assistance in technical matters and by helping with training in basic broadcasting skills. Incorporated community broadcasting societies at Fort Good Hope, Rankin Inlet, Fort Franklin, Eskimo Point, and Igloolik have access to the CBC low-power relay transmitters (LPRTs) in their communities to broadcast information and other local programs. Community stations at Pond Inlet and Pangnirtung may join this group in mid-1976; others will be added when they are ready to do so.

During the year, the Northern Service developed and promoted a broadcast recordings operation for northern artists and composers. The recordings include popular and traditional music for distribution to radio stations in Canada and the United States. Among the northern artists recorded this year were Etulu and Susan Peta, Jopi Arnaituk, Wilf Bean, Bill Tagoona and Alexis Utanak.

Acceptance was obtained from CBC Engineering and Transmission to use Super-8 film and ¾ inch video tape recording cassette systems in the transmission of northern-produced television programs. Because of this, the Northern Television Service was able to transmit, for the first time, programs produced by and for the native peoples.

Over the past year, greater use has been made by government and public institutions of the ANIKINFO service on northern television. Announcements average approximately 20 a month, ranging from notices of native festivals to training courses available, adult education, health and safety, legal aid and consumer information. These items now fill about 50 per cent of station-break periods.

On February 13, 1976, the television service to Fort Churchill was changed from a satellite feed to terrestrial microwave. The basic service remained the same, but viewers now see the local programs from CBWT in Winnipeg in place of those on the Northern Television Service schedule.

Developing the competence and versatility of staff dispersed in small operating groups throughout the North was largely keyed to self-initiative and team performance. On-the-job experience continued to be the chief stimulus to the broadening of abilities, improvement of skills and attainment of required standards. Local effort was supported and encouraged by assistance-funding of individual studies; by means of workshops, seminars and courses which may or may not be affiliated with CBC.

While learning opportunities were afforded in areas as wide-ranging as leadership, transmitter maintenance, digital fundamentals, video operations, television production, French language, budget formulation and data processing; the main aim of training was directed towards improving the on-air performance of staff, free-lancers and community groups engaged in local broadcasting.

With the objective of enhancing the quality of information programming, seminars were held for Morning Show radio producers; individual clinics for news editors and reporters and workshops to evaluate and upgrade the performance of announcer/operators. Of special note were the preparatory exercises carried out

by the radio team selected to cover the Arctic Winter Games and the initiation of a series of seminars on the legal aspects of broadcasting.

Plans for 1976–77

With the retirement of the Director, Andrew Cowan, after 36 years of service with CBC, the Northern and Armed Forces Services will be re-organized as follows, effective April 1, 1976:

The Armed Forces Service will be transferred to Radio Canada International; the new Director of the Northern Service, Doug Ward, will report to the Office of the Vice-President and General Manager, English Services Division. Components of the Northern Service will return to the reporting lines of the English and French Services Divisions and a small unit will be created under the Managing Director of Radio, French Services Division in Montreal, to serve remote broadcast operations in the province of Quebec. This unit will maintain a functional relationship with the Director of the Northern Service.

In the Fall of 1976, it will be possible to move a program from the northern production centres of Inuvik, Frobisher or Yellowknife directly into the Northern Shortwave Service. Programs will go from these production centres south to Montreal via satellite and from there via terrestrial means to the shortwave transmitters at Sackville, New Brunswick. At the moment this is being done on a very limited basis; for instance, a portion of *Kudlik*, the English and Inuktitut morning show from Frobisher is being carried on shortwave. The lack of technical facilities in Montreal prevents the Northern Service from doing this kind of north-to-south-to-north broadcasting on any expanded scale until after the Olympics. At that time, proper backhaul facilities will become available between the Telesat ground receiving station at Rivière Rouge, Quebec, and Maison de Radio-Canada in Montreal.

Long-term Plans

The Northern Broadcasting Plan has yet to be approved and funded by the Federal Government. The plan, if approved, will increase radio coverage to all communities in the North with populations of 200 or more and will improve the radio and television program services throughout the North.

Appendix A – List of programs made by and for the Native Peoples on the Northern Service.

Appendix B – 1975–76 Winter Shortwave Schedule.

Radio

Review of 1975–76

Eighteen of the Northern Service satellite radio and television projects under the CBC's Accelerated Coverage Plan were completed in 1975–76, with the four remaining projects to be completed before the end of 1976. An FM LPRT should also be established, under normal coverage plans, at Echo Bay (Port Radium) Mines on Great Bear Lake, Northwest Territories.

In the Northern Service Region, there are five medium-wave manned stations – Frobisher, Yellowknife and Inuvik in the Northwest Territories; Whitehorse, Yukon; and Churchill, Manitoba. Four of these stations: Yellowknife, Inuvik, Whitehorse, and Frobisher act as program and production centres for sub-regional networks, feeding their AM programs by terrestrial and satellite networks to a total of 39 low-power relay transmitters (two of which are affiliated community radio stations).

On the AM broadcast band, the Northern Service broadcasts in English, French and 11 native languages and dialects. Normal daily radio schedules consist of about 50 per cent locally- or regionally-originated programs, with the remainder taken from the English and French national networks of the CBC. All northern stations broadcast an average of 133 hours of programs per week.



Aimo Nookiguak, right, former manager at CBC Frobisher, demonstrates radio equipment operations in Igloolik, NWT (Marilyn Mercer)

On December 18, 1975, the CBC Northern Service began programming on its newest northern radio network. This network uses a separate carrier in one of the television channels of the ANIK satellite to link the Northwest Territories communities of Igloolik, Cape Dorset, Pangnirtung, Pond Inlet, Rankin Inlet, Eskimo Point, Baker Lake, Resolute, and Cambridge Bay. These stations, with the exception of Rankin Inlet, use transmitters on the FM broadcast band to broadcast AM programs. The program schedule on the new network is a combination of English and Inuktitut programs from the Northern Service production centres at Frobisher, Inuvik and Yellowknife. Programs from the Montreal Production Centre are fed to Frobisher by satellite and are rebroadcast on the northern network and vice-versa. The inauguration of this new network has changed the role of Station CFFB from that of providing a strictly local service to Frobisher listeners, to a sub-regional production centre for

the Eastern Arctic. Approximately 80 per cent of this new audience of listeners in the Eastern and Central Arctic are Inuit.

The same satellite network which serves the Eastern Arctic with programs from Frobisher, Inuvik, Yellowknife, and Montreal also made it possible for the first time in history to link all the radio transmitters in the Northwest Territories together from east to west. This facility has been used for special programming; i.e. an all-night New Year's program. It also allows the Yellowknife News to be picked up in Frobisher and vice-versa. Previously, news items had to be exchanged by telex or long distance telephone.

The Shortwave Service programs are produced mainly by the Northern Service Production Centre in Montreal. The broadcasts are in English, French, Inuktitut and Cree, on at least two frequencies, for a total of 19 hours a day.

Cree news programs, produced by the Montreal Production Centre, are also broadcast once a day (Monday to Friday) on the Quebec AM (English-language) community radio network. Two Cree newscasts a day are broadcast on the French Division's community radio network.

The Northern Service works in close co-operation with national, regional and local native groups such as Inuit Tapirisat of Canada (Ottawa, Ontario) Committee for Original Peoples Entitlement (Inuvik, NWT), Ye-Sa-To Communications Society (Whitehorse, YT), the NWT Métis Association (Yellowknife, NWT), and the Baffin Regional Inuit Association (Frobisher, NWT). Through this co-operation, Northern Service native-language programs continue to be enriched.

Resource development and land claims issues are of vital concern to Northerners at this time. Through its regular information programs in 1975-76, the Northern Service transmitted immediate information on developments and provided a forum for public discussion.

A special Northern Service coverage team followed the Mackenzie Valley Pipeline Inquiry through its informal hearings in small northern communities and its formal sessions in the larger centres. This 12-member team broadcast reports on each day's proceedings in the languages and dialects of the Mackenzie Valley and Delta - Dogrib, Chipewyan, Loucheux, Hare, Slave, Western Inuvialookton and English. The reports were also prepared in English and Eastern Inuktitut for distribution to other parts of the North. There are plans for the coverage team to come south when the hearings are taken across the country in May and June 1976.

The Fourth Arctic Winter Games involving participants from Alaska, the Yukon, the Northwest Territories, Quebec and Labrador, were held in Schefferville, Quebec in March 1976. Northern Service provided coverage of these events and originated a daily program live from Schefferville for the Northwest Territories and the Yukon. Telexed results of the various events were also sent to northern CBC stations for use in their regular programs.

Information about everyday life in the North continues to be an integral part of the Northern Service. Reports of weather conditions, spring breakup, highway washouts, plane schedules and arrival times for patients returning from hospital, are all part of the regular information flow. As an example, in April 1975, when HRH Prince Charles was on a tour of the North and had to change his schedule at the last moment, the only way to inform the people of Colville Lake that he was arriving that day was via the CHAK Inuvik message service.

The culture and oral history of the North forms an important part of northern programming. The Northern Service records legends, songs and stories for use in daily programs and preserves these for future use.

Northern Showcase began in mid-1975. It is an hour-long program produced in turn each week by the northern stations and the Montreal Production Centre and broadcast by them all. The series has included profiles of northern musicians - Gary Averill, Bob Ruzicka, Wilf Bean, Charlie Panigoniak; historical drama documentaries - *Northwest Passage*, *Sophia*; profiles of northern places - *Aklavik*, *Aklavik! Never Say Die!*, *Churchill Today*; current affairs documentaries - *The Dene Nation*, *Who Owns the Arctic?*, and *Alcohol: Epidemic North*. *Northern Showcase* will continue in 1976-77.

During the year, the Northern Service also made contributions, in the form of syndicated material, to other CBC program area. Some of these items were carried by Radio Canada International; others appeared in regular programs of the CBC English national radio network, such as "*Our Native Land*", "*Between Ourselves*", "*Judy*", "*The World at Six*", "*As It Happens*", and network sports programs.

Northern Television Service

Review of 1975-76

By the end of 1975, 28 locations in the North were receiving a daily service of television programs from the English-French national networks, mixed with specially-selected programs for those periods on the schedule which are normally filled by local or regional programs. Due to the fact that there are no television production facilities in the North, these periods are filled by programs obtained from CBC regional exchange, from US syndication and from agencies outside the CBC.

Certain specially-produced programs are carried by the Northern Television Service (NTS), such as *Full Circle*, a weekly 30-minute public affairs series produced in English by the Alberta Native Communications Society; *Tarqavut*, a weekly 15-minute Inuktitut-language information program produced by the Northern Service Montreal Production Centre; and *Nunatsiakmiut*, a series of 15-minute Inuktitut-language documentaries produced by a film workshop group in Frobisher. During the Mackenzie Valley Pipeline Inquiry, which began in March 1975, television reports were made following each day of the hearings, in English as well as in the various northern native languages and dialects.

In September 1975, a new service was offered to northern Inuit television viewers. Highlights of the next day's programs are given in Inuktitut the evening before and the morning of the telecast. Translation and production are made through the Northern Service Production Centre in Montreal.

In January 1976, a special, joint project was completed between the CBC Northern Service and Environment Canada. It is a Northern Weather Forecast Service, a weather synopsis for various northern regions, which consists of a two-minute rolling print-out, transmitted approximately six times daily.

Review of Specific Programs

Northern Television Service acquired and regularly scheduled programs on "societies in transition" and emerging people of Africa, Asia and Latin America. Some of the titles are particularly indicative of the content: *Visit to the Vanishing Eskimos*, *Indians in the Amazon*, *Indonesia – Wet Earth and Warm People* and *Northward, Northward – A Lapp Village Migrates*. Of particular relevance were programs reflecting changing conditions for native people in circumpolar nations. These programs were obtained from television organizations of the Nordic countries: Denmark, Finland, Iceland, Norway and Sweden. The programs were scheduled under the umbrella titles *People of People* and *Man and His Environment*. Northern Television Service continued its scheduling of approximately 5.5 hours of French language programs weekly. This represents some five per cent of the total schedule hours and is in line with the segment of northern population whose mother-tongue is French. Selection of programs is made by the CBC French Service Division in consultation with the Northern Television Service.

A number of special reports and programs were produced for the information program *Tarqavut*. Apart from its regular weekly 15-minute telecast, there was a 30-minute report on the Inuit Tapirisat of Canada's land claims position, *Nunavut*, presented to the Prime Minister and 14 members of his Cabinet. One 30-minute program was produced about the Ottawa outlet of northern native products, Canadian Arctic Producers and three half-hour programs were made during the Arctic Winter Games in Schefferville, Quebec. All three of these specials were made as a mixture of both English and Inuktitut and were produced by Marie Tessier-Lavigne.

Featurettes about the North entitled *Places and Places* continued and were supplemented by new items on 16 mm and super-8 film from sources other than within CBC.

Plans for 1976–77

Northern Television Service is sharing the cost of the translation and dubbing to Inuktitut of the national network program "*Images of Canada – Spirit in a Landscape: The People Beyond*" the English version of which is scheduled for telecast on the national network on October 27, 1976. The Inuktitut version of the program will be telecast on the Northern Television Service at a later date.

Northern Television Service provides research assistance to children's television for a program on the Montagnais Indians of Quebec.

Program material gathered since March 1975 in English and northern native languages and dialects may be used to produce a wrap-up program later in the year on the Mackenzie Valley Pipeline Inquiry.

Improvements will be made to the Arctic Weather Service. There will be an increase in the use of northern art work and slides throughout the northern television schedule. Further encouragement and assistance will be given to native groups, particularly in the Northwest, in developing a potential for production of programs to parallel the success of *Nunatsiaktut*.

CFWH Whitehorse

Review of 1975–76

Yukon Week in Review – A new weekly information program commenced on Sunday, October 26, 1975. This program covers the outstanding news events of the week and is produced by senior announcer/operator Cal Waddington.

Yukon Native Voice – In November, this program produced by Kathy Van Bibber, was changed from Saturday afternoon to Monday nights at 8:00 p.m. and was extended from one-half to a full hour. The program includes reports on a regular basis from stringers in all parts of the Yukon.

The Church in Action – In September, a seminar was held with the Religious Advisory Council members and producer Les McLaughlin. The result of this seminar was a new program, *The Church in Action*, to replace the traditional Sunday Service. A new approach to *Thought for the Day* called *Thought for Living* was also decided upon.

The Ye-Sa-To Communications Society had its founding conference on November 5, 1975. It began publishing a monthly newspaper called *Yukon Indian News* in June and on July 3, the news staff of CFWH held a reporter training seminar with the Ye-Sa-To newspaper reporters to help them improve their basic reporting skills. Other kinds of workshop sessions were held during the year.

Highlights

Extensive coverage was given to local incidents involving the appropriation of land by squatters. This situation developed from the uncertainty of the status of land due to the land freeze, and from the pending Native Land Claims. It was given national prominence on July 11 when there was a CBC studio debate between Mayor Lucier of Whitehorse, and the Chairman of the Squatter's Association, Frank Turner, on the program "*Sunny Days*".

The Annual Sourdough Rendezvous Festival in March, in Whitehorse, was covered from a White Pass Yukon Route Parlour Car, by senior announcer/operator Cal Waddington, announcer/operator Neil Hayes and nearly everyone else from the station. Events included dog races, snowmobile races, flour packing demonstrations, and a native folklore show.

Announcer/operator Terry Delaney reported on various sports events such as the Dawson City annual Top of the World International Curling Bonspiel in March and the Canadian Winter Games from Lethbridge. The Arctic Winter Games in Schefferville, Que. were given coverage during March.

The Farrago Folk Festival was held in April in Faro, YT and included well-known performers, Valdy, John Allan Cameron and Sylvia Tyson among others. Later, the Festival was featured on the

Sylvia Tyson show "*Touch the Earth*" on national network radio. Highlights of the Festival have been produced by Dusty Hornby, announcer/operator at CFWH for a transcription which has been pressed by Radio Canada International.

Other highlights of the year were: Discovery Day Celebrations in Dawson City in August, when a remote broadcast centre was set up on the paddle-wheeler the *SS Keno*; coverage of the Silver Anniversary celebrations in Whitehorse; and coverage of the carnival activities in Faro in March.

Special Events Coverage

During the period July 15 to 16, Terry Brown of the CFWH News Staff was in Haines Junction to report on the special briefing of the Arctic Institute of North America's involvement in Kluane National Park and other park projects.

A one-hour radio special was taped from material gathered at the CBC Variety Special held on August 9, featuring Yukon entertainers with Hank Carr as the main attraction.

Northern Service coverage of the Mackenzie Valley Pipeline Inquiry continued when it was held in Whitehorse for a week in August.

In November, CFWH produced a one half-hour special on the territorial by-elections held in Riverdale and Kluane.

In December, pre-ballot specials were produced featuring all candidates in the municipal elections of Whitehorse, Dawson and Faro. The specials were broadcast over local LPRT only.

Plans for 1976-77

CFWH is experimenting with a low power relay transmitter remote-controlled accessing package. This package allows station CFWH to interrupt the normal network feed to the LPRT and insert material of local interest. A spin-off from this project is the provision of a facility to remotely monitor the quality of the sound of the program material to and from the LPRT.

Slated for broadcast early in 1976, is the half-hour radio drama *The Price of Freedom is the Cost of Living*, a play by Yukon writer Henry Wilkinson, especially commissioned by CFWH and produced by senior announcer/operator Cal Waddington. Casting for the play was made from the Whitehorse Drama Society. Further radio dramas for broadcast will be commissioned in 1976-77 from local Yukon writers and will be cast from the local drama societies and groups.

CFYK Yellowknife

Review of 1975-76

Coverage of the Territorial Council meetings was provided via CFYK. *Focus North* - In April, CFYK began a new public affairs program Monday to Friday. This program was hosted and produced by freelancer Kelly Crichton and carried by CHAK Inuvik and the NWT radio network. *Dené Goindi* - In May, the station began a new Slave information program, Monday to Friday, produced by Nick Sibbeston and Joe LeMouel. *Mackenzie Valley Pipeline Inquiry* - News editor Whit Fraser travelled with Justice T. R. Berger in June to Alaska to examine the construction of the Alyeska oil pipeline.

Highlights

In its information program *Mackenzie AM*, CFYK has attempted to involve communities outside of Yellowknife. Announcer/operator Wayne Collins took the show on the road to Pine Point, Fort Smith, Hay River, Fort Providence, and Edzo during the year. Dogrib news reporter, Celine Mackenzie and consumer commentator Lynda Sorensen joined the program at Rae.

Since November 1, CFYK has given live coverage to local hockey. One game per weekend is carried from a series of games between the Yellowknife Huskies, an intermediate "A" team, against visiting teams from the south.

In January announcer/operator, George Tuccaro, went to Hay River to report on the curling brier and together with announcer/operator, Wayne Collins covered the Arctic Games preliminaries from January 16-18.

Also in January, freelancer, Cindy Clegg, produced a Northern Showcase the Nahanni National Park and another show on the Dene Declaration.

During 1975-76, CFYK increased the usage of native languages in its public affairs programming. For example, *Dené Goindi* is broadcast in Slave while the news broadcasts are in English, Dogrib and Chipewyan.

Special Events Coverage

On May 1, the staff covering the Mackenzie Valley Pipeline Inquiry reported live the opening of the first session of the newly elected Territorial Council in Yellowknife. Later that day, they broadcast their Territorial Council reports in all local languages.

In December, the Indian Brotherhood Assembly at Fort Rae received extensive coverage by CBC Mackenzie. The Assembly was closed to the press.

CFYK continued to report on the variety of fairs and carnivals held in the Mackenzie District. These included: the Mackenzie Days Fair in Fort Providence during August; the Dene Nu Days in Fort Resolution during August; winter carnivals at Fort Simpson, Fort Smith and Hay River and the Caribou Carnival in Yellowknife during March.

Various special programs were also produced by CFYK staff including a 15-minute nightly program on the NWT Council prepared by announcer/operator Marion Wylie and coverage of the Pan-arctic Inquiry by announcer/operator Cindy Clegg.

Plans for 1976-77

Announcer/operator Marian Wylie has gathered a list of names of the Yellowknife religious community for future consultation on a new religious talk show planned for Sunday mornings.

There are plans to cover the sessions of the Territorial Council in all languages as well as bringing in CBC staff from other CBC stations in the NWT.

CHAK Inuvik

Review of 1975-76

In May 1975, an agreement was signed between CBC and the Fort Franklin Community Council to have access to the local CBC transmitter to broadcast messages and announcements.

As CHAK is the nearest CBC station to Fort Franklin and also to the community station at Fort Good Hope, it acts as a parent providing them with training, technical maintenance, and other assistance.

Highlights

The CHAK staff continued to gather and broadcast extensive information about the proceedings of the Mackenzie Valley Pipeline Inquiry. Announcer/operator Earl Omholt-Jensen went on a special press tour of pipeline facilities in Prudhoe Bay and Fairbanks, Alaska in June; and supervising technician Dave Boudreau went to Fort Franklin and Fort Norman in July, to arrange for live reporting from the hearings on those LPRT's. Special half-hour programs in Inuvialuktun and Iqaluit were produced by announcer/operators Abe Oopik and Louie Blondin to be broadcast on the Delta Network following the regular native language programs. Reports were also received from the two weeks of community hearings in the Delta and on North Coast (Sachs Harbour, Holman Island and Paulatuk) in March.

During the year, the Public Affairs programs produced for CHAK by the Committee for Original People's Entitlement (COPE) continued. (For more detail of these programs see the listing in Appendix A).

In June, an Anglican Church service was broadcast in Inuvialuktun. An attempt is being made to occasionally air a church service in one of the native languages broadcast.

CBC Inuvik had the honour of winning first prize in the July 1 parade. Announcer/operator, Jo-Jo Pascal, won with a banner that proclaimed, "CBC Radio - It's a living".

Special Events Coverage

During the spring breakup in May, reports were received from seven settlements including reports on the Great Bear Lake

and Mackenzie River moving at Fort Norman and the Mackenzie River at Norman Wells.

A special Saturday current affairs program was produced in May by announcer/operator Barry Burgess on the NH&W nurses' strike in Inuvik.

In June, announcer/operator Earl Omholt-Jensen and announcer/operator Barry Burgess prepared a 20-minute special on the problems of dying in the NWT.

Eleven hours of live programming from the Northern Native Games at Fort McPherson was produced for the Delta Network in June. Four of these hours were in local native languages.

In August, Lois Keating sent in phone reports on the Indian/Eskimo Olympics held in Fairbanks where Inuvik/Aklavik athletes won six events.

Plans for 1976-77

CHAK intends, for the first time, to give reports in Hare, Loucheux and Inuvialuktun from the Territorial Council meetings when they are held in Inuvik from May 17 to June 4, 1976.

CHAK Manager Nellie Cournoyea requested, and was granted a further year's leave of absence to work on the Native Land Claims with the Committee of Original Peoples' Entitlement (COPE). The Acting Manager, Bob Rhodes, will continue in her absence.

CHFC Fort Churchill

Review of 1975-76

In 1975-76, the town of Churchill saw the completion of a multi-million dollar redevelopment program. A new hospital, schools, recreation facilities and housing were built in the townsite to replace facilities at the old military complex at Fort Churchill. The residents of Churchill have been involved in this total redevelopment and CHFC has acted as a vital communications link between the builders and the people from the announcement of the redevelopment to the opening ceremonies of the new complex.

A community comment slot on the four to six p.m. afternoon show *Roundabout* was very popular because it offered an

opportunity to the public for editorial comment in the absence of a local newspaper.

A "Between Ourselves" program about Churchill was aired on the national network Friday, February 6, and generated a favourable audience reaction. It was produced by former CHFC announcer/operator Barry Hussey.

Highlights

The annual migration of bird watchers provided good material for interviews. These people flock to the Churchill area each summer from all parts of Canada and the United States to study the nesting geese and other birds.

On August 29, announcer/operator Paul Hunks achieved national fame on "As It Happens" during an interview about his experience riding a bucking Beluga whale.

An Armed Forces Day was held in September in Churchill, and highlights were included in local programming throughout the week.

In September, announcer/operator Paul Hunks had a one-half hour interview with Western Canada's first TV weatherman, 85-year old Ed Russenholt, who was in Churchill on behalf of the Historic Sites Committee to unveil plaques commemorating Sir Thomas Button's voyage of 1612 and the completion of the Hudson Bay Railway in 1929.

On February 8, the first remote broadcast from the new Churchill recreation complex featured live reports of the Skatathon and Shmockey games to raise funds for minor hockey.

Special Events Coverage

A CBC stage show, presented in April, was a considerable success. The headliners of the show were Family Brown, Dick Damson and Ted Komar.

On April 30, 1975, CHFC staff broadcast reports from the Manitoba Hydro Hearings on the Churchill River diversion.

During December, there was live coverage of *Nike-Black Brandt*, a rocket launch, Cape Kennedy style, from the Churchill rocket research range. At Mission Control was announcer/operator Paul Hunks with announcer/operator Joe Novak as studio host, and Dwayne MacIntosh handling the technical operations.

During the winter carnival week of March 17, eight hours of live broadcast as aired from the Community Hall.

Among other special programs broadcast on CHFC was a program on the Churchill housing plan entitled *Budding Building Boom*, which was produced for *Northern Showcase* by operator/announcer Paul Hunks and operator/announcer Joe Novak and a half-hour special on the education problems in Churchill, produced by announcer/operator Terry Reilander.

CFFB Frobisher

Review of 1975-76

The Inuit-Tapirisat of Canada (ITC) Land Claims Hearings created a great deal of interest among the residents of Frobisher. CFFB responded to this by incorporating ITC items into regular programs and produced as well, a special *Kannatap Inuit Nunnagat* in December with Elisapee Davidee interviewing the President, Vice-President and other members of ITC about the land claims issue.

In March, Josiah Kudludsiak, Vice-President of ITC, Meeka Wilson, Secretary-Treasurer of ITC and Atchainak Akeeshuk, Land Claims Representative, were in Frobisher and did a thematic phone-in show from CFFB on the Nunavut proposal.

With the co-operation of the ITC and the Baffin Region Inuit Association, the station produced five consecutive *Ishumavut* phone-in programs between March 15 and 19 from Frobisher. Each program concerned a different aspect of the land claims proposal.

Highlights

An example of one of the many interviews carried on CFFB's regular programs was one made in May when announcer/operator Peter Lockyer talked with Colin Crosby, Director of Chimo Shipping. They discussed the longshoremen's strike and how it would affect the sea-lift operations in the North.

Also during May, announcer/operator Elisapee Davidee hosted an open-line show on Inuktitut content in the local newspaper, Inukshuk.

During September, announcer/operator Peter Lockyer interviewed Dr. W. Kenyon of the Royal Ontario Museum in Toronto for the *Kudlik* morning show. They discussed an exhibit honouring the 400th anniversary of Sir Martin Frobisher's first visit to the Eastern Arctic.

A local sportscast with Al Vick was added to the morning show in November and in January, Aimo Nookiguak became the host of the afternoon show *Supper Club* with excellent audience reaction.

In February 1976, Peter Baril was appointed location manager at CFFB. Before joining Northern Service, Mr. Baril worked with Radio Canada International as an announcer/producer.

Special Events Coverage

In April, CFFB staff reported on the Toonik Tyme activities and recorded as well, two concerts, one by the rock group, Abraham's Children, from Toronto and one by Charlie Panigoniak of Eskimo Point.

In June, CFFB celebrated the longest day of the year by doing an all-night-long program. Various Frobisher residents took part in the 24-hour broadcast.

Plans for 1976-77

Plans are being undertaken to produce extensive information/education programs on law health, alcohol and other matters of concern to the people of the Eastern Arctic.

Montreal Production Centre

Review of 1975-76

Highlights

Northern Exchange (northern syndication) started in April with representative items from north and south. In July, a series of two-minute talks on *How to Take Part in Various Grant-seeking Projects* was produced by English producer Les McLaughlin, and translated into Cree and Inuktitut. These were later scripted for distribution to northern stations, and translated into local languages and dialects.

In June, announcer/producer, Elijah Menarik, returned from a two-week stay in Greenland with an exchange agreement from Radio Greenland to provide weekly news reports and variety programs suitable for the respective audiences.

In September, the Director of Radio Greenland visited Montreal and it was agreed to exchange weekly news telex in order to provide Canadians and Greenlanders with a closer understanding of conditions in each others' country.

The first program made in collaboration with the Northern Quebec Indian Association (NQIA) was produced in June by Peter Inukpuk on the subject of land use. Also produced in June, was a regional program about the Indian Friendship Centre Annual Meeting in Toronto. During September, the Montreal office of the Northern Quebec Inuit Association (NQIA) ordered a local loop to provide a radio feed from the Radio-Canada distribution point to enable their staff to listen to the daily phone-in program *Ishumavut*, produced for shortwave.

In January, the Chief of the Fort George Band Council reported that *Cree Hour*, heard in that community, is much appreciated.

The Montreal office participated in a seminar with representatives from the Secretary of State's office in February. The topic discussed concerned radio, TV and the northern people.

Plans for 1976-77

There are plans to expand disc recording and distribution of northern artists' work. Inuit radio drama will explore land use, resource development and other themes in a form developed by the people of Povungnituk, who are active participants in community radio.

As a result of a weekly exchange of programs and news between Radio Greenland and the CBC Northern Service Production Centre in Montreal, the first exchange visit of a broadcaster from Greenland will take place in July 1976. Such exchanges between Canadian and Inuit broadcasters of other countries will lead to a closer cultural affiliation and exchange of information in this developing and specialized area of radio program service.

There are plans for formal membership and activities to be taken up by CBC Northern Service with the Federal Association of Native Language Interpreters/Translators, in order to achieve a consistent standard in broadcast language.

Appendix A

Programs made by and for the Native Peoples and Broadcast in the Northern Service

Shortwave Service

Programs broadcast by the Montreal Production Centre

Monday Program (English) – Mondays through Saturdays, 0630–0800. A wake-up show of news, weather, sports and feature items from the North and from the network. Mainly in English with French news and sports at 0700. Produced by Les McLaughlin. 9 hours weekly.

Millachine (Eastern Inuktitut) – Mondays through Fridays, 2030–2100 (repeated next day at 1330–1400) and carried live to Frobisher via satellite and broadcast over the northern radio network. The Monday and Thursday program is produced in Montreal by Elijah Menarik and Meakie Pudlat. Monday's program contains a progress report on Inuit patients who are in hospital centres away from their home communities. The Tuesday and Wednesday programs have interview items on various subjects such as native organizations, council meetings, co-ops, etc. Thursday's program has old-time stories and legends from various Eastern Arctic settlements. This Thursday program is also sent to Radio Greenland for rebroadcast over their station as part of our exchange program with them. Friday's edition originates in Ottawa with Mary Simon, freelancer, as host. 5 hours weekly.

Inumavut (Our Thoughts) (Eastern Inuktitut) – Mondays through Fridays, 1330–1330 and carried live to Frobisher via satellite and broadcast over the northern radio network. A phone-in program with producer and host, Moses Novalinga. The phone-in facility makes the program a forum on which the Inuit can exchange ideas and express opinions on issues of importance. News, weather, and music are also featured. 5 hours weekly.

National News (Eastern Inuktitut) – Mondays through Fridays, 1730–1745 (repeat at 2115–2130) and fed live to Frobisher via satellite and broadcast over the northern radio network. Events across Canada and around the world are reported daily. 1 hour 15 min. weekly.

Cree News (Eastern Cree) – Mondays through Fridays, 0755–0800 (repeated on Quebec community English network at 0855–0900) and 1655–1700 (repeated on Quebec community English network at 2110–2115 and on Quebec community French network at 2223–2228). Produced by freelancer, Edna Voyageur. 1 hour 40 min. weekly.

Northern Messenger (English) – Mondays through Fridays, 1213–1230. News and information about the North, news and feature items from northern locations and messages from Southerners to friends and relatives in the North. Produced by Les McLaughlin. 1 hour 15 min. weekly.

The Berger Inquiry (English and Eastern Inuktitut) – Tuesdays to Fridays, 2130–2155, and Saturdays, 2000–2025. Whit Fraser of CFYK, produces an English-language introduction and 15-minute report on the day's proceedings, followed by Abe Ookpik's 10 minute report in Eastern Inuktitut. May not be featured some days due to Inquiry recessing. Produced in Yellowknife. 2 hours 5 min. weekly.

Ikaluit Uquasi (Frobisher Calling) (Eastern Inuktitut) – Mondays, 2003–2030. Produced in Frobisher by staffer, Jonah Kelly. The program serves traditional cultural interests, and features interviews about the old way of life, the history of the Inuit, legends, stories and folk music gathered in settlements and communities throughout the Arctic. 30 min. weekly.

Neejowtit Ikalonee (Eastern Inuktitut) – Tuesdays, 2003–2030. Produced in Frobisher. A music program with a hard rock sound. 30 min. weekly.

Kannatap Inuit Nunnagatt (Eastern Inuktitut) (Canada North of 60°) – Wednesdays, 2003–2030. Produced by Jonah Kelly at CFFB, Frobisher. A news-magazine program which provides in-depth summaries of recent happenings. The program regularly includes Co-op news, reports of settlement council meetings and newspaper editorial comments about the North. 30 min. weekly.

Teterkaat (Eastern Inuktitut) – Thursdays, 2003–2030. Produced at CFFB, Frobisher. Basically a music program with reports from Baffin Island communities. 30 min. weekly.

National News Roundup (Eastern Inuktitut) – Fridays, 2003–2030 (repeat Saturdays at 1303–1330). Produced by Elijah Menarik, Meakie Pudlat and Moses Novalinga. 1 hour weekly.

The Cree Hour – Mondays through Fridays, 1430–1530 (also featured on Quebec community English network at this time), repeated 1700–1800 (also featured on Quebec community French network at this time). A program of legends, interviews and music with hosts Matthew Iserhoss and Charles Matouch. 10 hours weekly.

Delta News (English) – Saturdays, 0730. A report in English fed from CHAK, Inuvik as part of the Northern Morning Show. The program gives news of people, events and developments in the settlements around the Mackenzie Delta. 15 min. weekly.

Our Native Land (English) – Saturdays, 1205–1300. The only regular National Network radio program presenting the views of Canada's native peoples, with hosts Bernelda Wheeler and Beth Paul. 1 hour weekly.

The Cree Speaks (Eastern Cree) – Saturdays, 0930–1000 (also featured on Quebec community English network at this time), repeated 1830–1900 (also featured on Quebec community French network at this time). Program includes reports on Cree patients hospitalized in Montreal and Quebec City, music and translation of newspaper items of interest to Cree listeners. Produced by freelancer, Edna Voyageur. 1 hour weekly.

Tarqramiut (Eastern Inuktitut) – Saturdays, 0830–0900 (repeated at 1330–1400). A summary of editorial comments from northern newspapers. Fed live to Frobisher via satellite and broadcast over the northern radio network. Produced by Elijah Menarik, Meakie Pudlat and Moses Novalinga. 1 hour weekly.

Radio Greenland – Saturdays, 1400–1430 and fed live to Frobisher via satellite and broadcast over the northern radio network. There is an Eastern Inuktitut version at the beginning of the program, to explain the Greenland Inuktitut dialect which will follow for the remainder of the program. It is a program of legends and stories. 30 min. weekly.

Arnanut (Eastern Inuktitut) – Saturdays, 2030–2100. Produced in Frobisher. Featuring interviews of particular interest to women listeners. 30 min. weekly.

Television Service

Programs produced by the Montreal Production Centre

Tarqravut (Inuktitut) – Seen on Fridays at 1200 on Channel “B” (Western Arctic) and at 1600 on Channel “C” (Eastern Arctic). An information program produced for the Inuit of the Eastern and Western Arctic. Produced by Marie Tessier-Lavigne, with Elijah Menarik, Moses Novalinga, and Meakie Pudlat as hosts. 15 min. weekly.

Programs produced for the CBC Northern Television Service

Nunatsiakmiut (Inuktitut) – Seen on Fridays at 1215 on Channel “B” (Western Arctic) and at 1615 on Channel “C” (Eastern Arctic). A series of documentaries produced by the “Nunatsiakmiut” Film Workshop Group in Frobisher. 15 min. weekly.

Note: Tarqravut is also repeated on Fridays at 1800 on Channel “B” and 2100 on Channel “C”. Nunatsiakmiut also repeated on Fridays at 1815 on Channel B and 2115 on Channel C.

Radio Station CFWH, Whitehorse

Yukon Native Voice (English) – Saturdays, 1630–1700. This program includes news and music with some native-language items where possible (Tlingit and Tutchone). Produced by Kathy Van Bibber, on staff, at CFWH. 1 hour weekly.

Our Native Land (English) – Saturdays, 1300–1400. The only National Network radio program presenting the views of Canada’s native peoples with hosts, Bernelda Wheeler and Beth Paul. 1 hour weekly.

Klawowya (English) – Saturdays, 1400–1600. A request show aimed at native youths to encourage contributions from freelance community correspondents. These contributions are considered an important facet of this information and music program. Produced by Kathy Van Bibber, on staff, at CFWH. 2 hours weekly.

Radio Station CFYK, Yellowknife

Community Announcements (English) – Mondays through Fridays, 1240–1225 and 1715–1725. Program includes community announcements of interest to the Mackenzie Network’s native listeners. Producer varies with the announcer/operator on shift. 2 hours 5 min. weekly.

The Berger Inquiry – Mondays through Fridays (except when Inquiry recessing), 1903–2000. An introduction and English-language report on the day’s proceedings is produced by Whit Fraser. This is followed by reports in 10–12-minute blocks in Chipewyan and Dogrib by Joe Tobie, in Slave by Louis Blondin, and in Western Inuktitut by Abe Ookpik. A similar one-hour package is sent at the same time to CHAK for airing on the Delta Network. The English introduction and report by Whit Fraser is identical, with reports in Western Inuktitut by Abe Ookpik, in Loucheux by Jim Sitichingly, and in Hare and Slave by Louie Blondin. 5 hours weekly.

Native Voice News (Dogrib) – Tuesdays through Fridays, 0737–0740, 0837–0840, 1237–1241, and 1725–1729. Four-minute newscasts of original material geared to the Dogrib people and updated throughout the day. Produced by Celine Mackenzie. Immediately following Dogrib news are Chipewyan newscasts produced by Evelyn Cook. 2 hours 40 min. weekly.

Our Native Land (English) – Sundays, 2103–2200. The only regular National Network radio program presenting the views of Canada’s native peoples with hosts, Bernelda Wheeler and Beth Paul. 1 hour weekly.

Gather Round (Slave, Dogrib, Chipewyan and English) – Saturdays, 1403–1630. A program of country and western requests produced and hosted by local native people. 2 hours 30 min. weekly.

Square Dance Notebook (English) – Saturdays, 1830–1900. A program of live toe-tapping sounds. Host and producer Bob Fyfe, freelancer. 30 min. weekly.

Alberta Native Communications Society Program (Alberta Cree) – Saturdays, 1903–1930. A program with information about the natives of Alberta. Produced by Barbara Angus for the Alberta Native Communications Society. 30 min. weekly.

Country and Western Show (Dogrib and English) – Saturdays, 2100–2200. Record show produced and hosted by Celine Mackenzie in Dogrib, with some English featuring selections requested by the native peoples. 1 hour weekly.

Dene Goindi (Slave) – Mondays through Fridays, 2030–2100. Information and northern music for Slave people. Hosted and produced by Nick Sibbeston and J. LeMouel. 2 hours 30 min. weekly.

Focus North (English) – Mondays through Fridays, 2000–2030. Mackenzie Network and NWT Public Affairs Show. Produced and hosted by announcer/operator, Liz Hay. 2 hours 30 min. weekly.

Dene News Hour (Slave, Dogrib and Chipewyan) – Mondays through Fridays, 1000–1200. News and information. A strong, new approach to Dene News at BC Mackenzie marking the end of translations of English newsroom copy. Three native-language broadcasters daily prepare their own reports of hard news items as well as more informal community news. 5 hours weekly.

Radio Station CHAK, Inuvik

Community Announcements (English) – Mondays through Sundays, 1215–1230, 1830–1900, and 2310–2330. Community and public service announcements and personal messages. This program is an important part of the CHAK schedule, supplying for some listeners, their only form of communication. 7 hours weekly.

Drop Ins (working title) (Inuktitut, Loucheux and Hare) – Mondays through Fridays, heard three times daily during the Morning show (0600–0900); during the Noon show (1200–1400); and during the Afternoon program (1600–1800). This feature is made up of approximately one-minute in each language and prevents information on native affairs. 55 min. weekly.

Morning Program (primarily English, some Inuktitut) – Mondays through Sundays, 0600–0900. A program of information and public affairs items, with articles in Inuktitut by Ishamel Alunik. 21 hours weekly.

A Native Voice (Inuktitut, Hare and Loucheux) – On Tuesdays, the program is featured in Inuktitut; Thursdays in Hare; and Fridays in Loucheux during the 2230–2300 time slot. An information and public affairs program produced on a contract basis by the Committee for Original Peoples Entitlement (COPE). 1 hour 30 min. weekly.

A Long Time Ago (Inuktitut, Hare and Loucheux) – Featured Mondays and Wednesdays, 2230–2300. Stories and legends of the native peoples. 1 hour weekly.

Up The River Show (Hare) – Mondays through Fridays, 2003–2300. Current and public affairs material. The program also features personal messages and public service announcements. Host is Ernestine Holman. 2 hours 30 min. weekly.

Dene Goinsiday (Hare) – Mondays, Wednesdays, Thursdays and Fridays, 2230–2300. A public affairs program produced in Yellowknife and featured on the Delta Network only. 2 hours weekly.

The People Speak (Inuktitut, Loucheux and Hare) – Saturdays from 1400–1530 in Inuktitut; Saturdays from 1600–1730 in Loucheux; and Sundays from 1300–1400 in Hare. Produced by the Committee for Original Peoples Entitlement (COPE), the program features interviews, discussions, and opinions of current affairs. As well, the program often features personal messages voiced by the people themselves. 4 hours weekly.

Eskimo National News (Inuktitut) – Saturdays, 1830–1900. A summary of the week's major news stories, produced in Montreal. 30 min. weekly.

Yesterday Before (English) – Sundays, 1230–1300. A program featuring personal experiences that make up the history of the North. 30 min. weekly.

The Trapline (English) – Saturdays, 1230–1300. Information for and about the trapping industry. 30 min. weekly.

Our Native Land – Saturdays, 1305–1400. The only regular National Network radio program featuring the views of Canada's native peoples with hosts, Bernelda Wheeler and Beth Paul. 1 hour weekly.

Radio Station CFFB, Frobisher

Kudlik (Information Morning) (Eastern Inuktitut) – Mondays through Fridays, 0600–0900. An Inuktitut-language program (with some English), of music, network news, local news, weather, sports, interviews and local feature items of interest to the local community and the Eastern Arctic. Producer varies with announcer/operator on shift. 15 hours weekly.

Nallachine (Things to Listen to) (Eastern Inuktitut) – Mondays through Fridays, 1330–1400. This program features interviews, reports on Inuit patients hospitalized in centres away from their home communities, and old-time stories as well as music. Produced in Montreal by Elijah Menarik and Meakie Pudlat. 2 hours 30 min. weekly.

Ishumavut (Our Thoughts) (Eastern Inuktitut) – Mondays through Fridays, 1230–1330. A phone-in program with producer and host, Moses Novalinga. The phone-in facility makes the program a forum on which the Inuit can exchange ideas and express opinions on issues of importance. News, weather, and music are also featured. Produced in Montreal. 5 hours weekly.

Supper Club (Eastern Inuktitut) – Mondays through Fridays, 1603–1800. Same format as *Kudlik*, above, intended for the "late afternoon listening" audience. 10 hours weekly.

National News (Eastern Inuktitut) – Mondays through Fridays, 1730–1745 (repeated at 2315–2330). Produced in Montreal. 1 hour 15 min. weekly.

Territorial Eastern Arctic News (Eastern Inuktitut) – Mondays through Fridays, 1745–1800 (repeated at 2300–2315). The news is gathered from Eastern Arctic settlements, from the CBC's newsroom in Yellowknife, and from news reports in Ottawa. 1 hour 15 min. weekly.

Neejowtit Ikalonee (Eastern Inuktitut) – Mondays, 1403–1430. A music program with a hard rock sound. Producer varies. 30 min. weekly.

Ikaluit Uquasi (Frobisher Calling) (Eastern Inuktitut) – Tuesdays, 1403–1430. Produced by Jonah Kelly for CFFB, Frobisher. The program serves traditional cultural interests, features current affairs, interviews about the old way of life, the history of the Inuit and legends, stories and folk music gathered in settlements and communities throughout the Arctic. 30 min. weekly.

Kannatap Inuit Nunnagatt (Canada North of 60°) (Eastern Inuktitut) – Wednesdays, 1403–1430. A news-magazine program which provides in-depth summaries of recent happenings. The program regularly includes Co-op news, reports of settlement council meetings and newspaper editorial comments about the North. 30 min. weekly.

Arnanut (Eastern Inuktitut) – Thursday, 1403–1430. Deals with interviews and discussions of particular interest to women listeners. 30 min. weekly.

Teterkaat (Eastern Inuktitut) – Fridays, 1403–1430. Light music program with reports from Baffin Island communities. 30 min. weekly.

Nunavut (Inuktitut) – Mondays through Fridays, 2000–2100. Current affairs program on issues and events in the "Nunavut" territory. Starts with a line-up of features coming up in the program. Inuktitut-language and vocabulary improvements; phone reports of events in the settlement and one of either a narration of an Inuit legend, or an item of interest to the women listeners, or to the male listeners, e.g. trapping. Also included are 60-minute spots on consumer affairs, law, health, alcohol, government information programs, and an up-to-date report on the "Nunavut" proposal negotiations with the federal government. Program is laced with music and entirely in Inuktitut. 5 hours weekly.

Our Native Land (English) – Saturdays, 1210–1300. The only regular National Network radio program presenting the views of Canada's native peoples, with hosts Bernelda Wheeler and Beth Paul. 1 hour weekly.

National News Roundup (Eastern Inuktitut) – Saturdays, 1303–1333, and Sundays, 1603–1633. Produced in Montreal. 1 hour weekly.

Tarqramiut (Eastern Inuktitut) – Saturdays, 1330–1400. A summary of editorial comments from northern newspapers. Produced in Montreal. 30 min. weekly.

Radio Greenland – Saturdays, 1400–1430. There is an Eastern Inuktitut version at the beginning of the program, to explain the Greenland Inuktitut dialect which will follow for the remainder of the program. It is a program of legends and stories. 30 min. weekly.

Pov Drama – Saturdays, 0900–0930. Reruns of programs featured in the early 1970s on the productions of the Povungnituk Drama Society. 30 min. weekly.

Baffin Beat (Eastern Inuktitut and English) – Saturdays, 2300–0100. The music is directed to the Inuit with local Inuit talent participating live or pre-recorded. 2 hours weekly.

Sunday Afternoon (Eastern Inuktitut) – Sundays, 1900–1930. Music and community announcements comprise this program's format. 30 min. weekly.

Driftin' (Eastern Inuktitut and English) – Sundays, 2303–0100. A music show interrupted by northern news in English. Producer varies with announcer/operator on shift. Very similar in format to the Mondays through Fridays program in the same time slot, *The Late Show (English)*. 2 hours weekly.

Radio Station CHFC, Fort Churchill

Morning Show (Keewatin Inuktitut) – Mondays through Fridays, 0800–0900. Three, three-minute Inuktitut inserts by Lavinia Brown during the morning show. 45 min. weekly.

Chipewyan Program (Chipewyan) – Mondays through Fridays, 1330–1340 (occasionally repeated at 1530–1540). This program includes messages to residents of Tadoule Lake, 140 miles west of Churchill, stories, legends, local news and music. Produced by an announcer/operator at CHFC. 50 min. weekly.

Country Hour (Chipewyan) – Tuesdays through Saturdays, 1430–1530. A program featuring country music, hosted by Suzanne Tom. 5 hours weekly.

Our Native Land – Saturdays, 1305–1400. The only regular National Network radio program featuring the views of Canada's native peoples with hosts Bernelda Wheeler and Beth Paul. 1 hour weekly.

Native Communications Show (Manitoba Cree and English) – Saturdays, 1400–1430. This program contains anything affecting the native and Métis peoples in Northern Manitoba. Produced by the Native Communications Inc. of Thompson, Manitoba. 30 min. weekly.

Cree Religious Broadcast (Cree) – Sundays, 1130–1200. Religious broadcast produced by the Native Communications Inc. of Thompson, Manitoba. 30 min. weekly.

The Chipewyan Hour (Chipewyan) – Sundays, 1503–1600. Hosted by Suzanne Tom, this program features messages, legends, stories and country and western music. 1 hour weekly.

Note: The shortwave service and northern program centres all broadcast a weekly total of approximately 133 hours of radio programs.

EFFECTIVE NOVEMBER 1975 / EN VIGUEUR NOVEMBRE 1975

27

Canadian National Railways (CNR)

Responsibilities

The development of the North's mineral, petroleum, and water resources constitutes a complex set of projects strategic to the welfare of present and future generations of Canadians. Recognizing this commercial potential and social responsibility, CN continues to be active in providing efficient and comprehensive transportation and telecommunication facilities for business and community interests in these regions.

CN's activities in the Canadian North concern bulk transport of mine and forest products (and potentially, of liquid fuels) to southern markets, transport in logistics support of exploration and construction projects, and re-supply of communities, telecommunications (telephone and micro-wave) for residential and commercial uses, and consulting on a contract or co-operative basis for pipeline, rail, and other studies within and outside CN. Canalog Logistics Ltd., a CN subsidiary formed in 1973, is particularly concerned with studies relating to transportation developments in the North.

Review of 1975-76

In 1975, Canalog Logistics Ltd. in conjunction with Canadian Pacific Consulting Services Ltd. conducted the "Yukon Railway Study" on behalf of Transport Canada and the Department of Indian Affairs and Northern Development. The study considered the extension of the White Pass and Yukon Railway north to Carmacks, primarily to serve mining activity in the region. Five alternative basic rail route options were studied and their benefits to northern development were assessed. The study has now been completed and the Final Report has been submitted to the Federal Government.

On another front, protection of the sensitive Arctic environment from human intervention should be enhanced through CN's participation in the National Emergency Equipment Location System, (NEELS). This is a comprehensive on-line computer system, sponsored by Environment Canada in close co-operation with Transport Canada and other agencies, which provides vital information on the nearest suitable equipment and materials for combating spills of oil or other hazardous material anywhere in Canada.

In the Central Arctic, CN's rail line to the port of Churchill plays a major part in the development of the region. The port is used for the shipment of grain and sulphur to European ports and volumes of both are expected to grow in the future. In order to be able to handle the expected increasing volumes of rail traffic to the port, the line from Gillam to Churchill is being upgraded.

In 1975, CN was actively involved in the establishment of National Transportation Limited, a government-owned re-supply service which ships supplies from the port of Churchill, up Hudson Bay to the town of Baker Lake; serving the needs of the Keewatin District in the Northwest Territories.

In the Western Arctic, CN continues to operate the Alberta Resources Railway (under lease agreement with the Provincial Government) to Grande Prairie and Dawson Creek. The Northern Alberta Railway, jointly owned by CN and CP, constructed a major intermodal yard at Fort McMurray in 1975, to help in servicing the Syncrude oil sands project. Development in that area is expected to continue.

The Great Slave Railway, owned and operated by CN, also plays an important part in the development of the Canadian North. This railway, running to Hay River and Pine Point, plays a part in the supply of material to northern resource development projects. Supplies, taken from the railway at Hay River are barged up the Mackenzie River by Northern Transportation Co. Ltd., to points as far north as Tuktoyaktuk, depending on the season. In the other direction, the railway ships lead-zinc concentrates from the mines in the Mackenzie District of the Northwest Territories, down to Edmonton for further distribution.

Under a July 1973 "agreement in principle", the governments of British Columbia and Canada initiated a rail development, a port development, and the related infrastructure programs for Northwest BC. The Governments are negotiating details as portions of the programs develop. In accordance with the "agreement in

principle", CN completed mapping and environmental studies for the proposed Meziadin Branch commencing at Terrace and extending 262 miles to a connection with the proposed BC Railway Dease Line from Fort St. James to Dease Lake.

In the Prince Rupert area, CN is actively involved in a number of projects to develop the port into a major gateway to the North. The National Harbours Board (NHB) is in the process of completing a general cargo port, the Fairview Terminal, which will contain two berths on 40-acres. CN is presently negotiating with the NHB and will likely install and maintain support trackage on a 15-acre site. At the grain terminals, elevator facilities were upgraded and additional trackage constructed. Also, under study, is a proposed bulk coal terminal at Prince Rupert to handle Northern Alberta and BC coal. One of the alternatives is the possible movement of Northern BC coal along CN lines to Prince Rupert for shipment abroad.

In addition to its normal railway operations, CN serves the North through its "Aquatrail" service to Alaska. The service consists of a barge carrying 23-31 railway cars every day from the port at Prince Rupert to Whittier, Alaska for connections to the Alaska Railway.

The importance of telecommunications in the continuing development of the North is recognized and Canadian National Telecommunications (CNT) undertakes to meet the needs of business and industry through the expansion of its facilities and services. Telecommunication services also play a significant role in the social life of northern residents and CNT will endeavour to keep pace with the demands imposed by expanding communities. While CNT's operations in the North are mainly centred on telephone service, other services provided such as data communications, Public Message and Telex play a key role in the flow of information.

In 1975, CNT made various changes to its main telecommunications routes and systems, in order to considerably increase its capacity. In addition, terminal equipment was installed to provide satellite communications to Panarctic Oil at Rae Point on the east shore of Melville Island.

At the end of the 1975 fiscal year, 7,368 telephones, including 17,396 main stations, were served from a total of 59 telephone exchanges. This represents a 10 per cent increase in main stations over the previous year. The number of completed long-distance calls increased by 3.2 per cent over last year. Direct distance dialing equipment to serve communities in Northeastern British Columbia was installed in November at Fort Nelson. The communities of Fort Nelson, Muskwa and Cassiar are now provided with full access to the DDD network. With this expansion, 90 per cent of CNT's subscribers in the North now have direct distance dialing service compared to 78 per cent at the end of 1974.

Local telephone service was established mid-year at the Inuit settlement of Ulukuk, 250 miles northeast of Inuvik on the Arctic Ocean. Long distance service is provided over DEW Line facilities. Telephone exchange expansion or replacement projects were undertaken at Klavik, Pelly Bay, Fort Simpson, Whitehorse, Yellowknife, Muskwa, Dease Lake, Ross River and Beaver Creek. Further expansion of CNT's public mobile telephone service occurred with the provision of additional base station facilities at Elsa, Faro, King Solomon and Fox.

Plans for 1975-76

The area serving the Central Arctic, which intends to continue with the upgrading of the Churchill line. In Prince Rupert, under a Port Development program, the Federal Government, along with CN, will complete the general cargo terminal along with all of the support equipment.

Plans for CNT, installation of local and long-distance facilities will continue. Expansion of CNT's main communications systems is scheduled for many of the main routes.

Local telephone service will be established at Holman, which is on the west shore of Victoria Island, and at Snowdrift, on the east arm of the Great Slave Lake. These two communities along with Sachs Harbour are scheduled for long distance service via Anik 1 in the third quarter of 1976.

The small native community of Pelly Crossing, which is between Whitehorse and Dawson City, is scheduled for local dial and long distance service by late 1976.

Telephone exchange expansion projects scheduled for 1976 include: Haines Junction, Porter Creek, Dawson City, Pine Point, Fort Simpson, Spence Bay and Fort Nelson. The Community of Wonowan will be provided with DDD service.

Long-term Plans

CN will continue its active contribution toward an orderly development of the North. With its experience in northern rail operations coupled with the involvement of Canalog Logistics Ltd., in the Yukon Railway Study, CN is deeply interested in possible further rail development in the Yukon. Such development is foreseen as leading to an eventual connection southward to the continental rail system, and, in the longer term, a northward connection into Alaska. Canalog is prepared to participate in any study projects relating to these possible future developments.

CNT will secure expansion of all telecommunication services to keep pace with service demands. It is planned to expand the local dial service at Whitehorse with an electronic stored-program control telephone exchange. The last link of the Hay River-Inuvik microwave system will be completed. In turn, this Mackenzie Valley system will be connected to the Grande Prairie-Alaska microwave system through the construction of the link between Fort Simpson and Fort Nelson. Plans are being made to provide telecommunication services for the construction and operation phases of the proposed gas pipeline if this project is finally approved.

Canadian Transport Commission (CTC)

Air Transport Committee

Responsibilities

The Air Transport Committee's responsibilities include the licensing of air carriers to operate commercial air services; the economic regulation of air carriers; investigations and surveys relating to the operation and development of commercial air services in Canada and advising the Minister of Transport on matters relating to civil aviation.

Review of 1975-76

GAP Pine – There were no further contract awards or extensions for GAP Pine services.

DEW Line – Awarded contract to Transair Limited for the vertical airlift (north-south) for the period of July 1, 1975 through June 30, 1976; Awarded contract to Nordair Limited for the lateral airlift (east-west) for the period July 1, 1975 through September 30, 1976.

Supervision and co-ordination of these contractual arrangements continues.

Authorities Granted to:

Frontier Helicopters Limited – to operate a Class 9-4, Groups A-RW and B-RW International Charter service from Watson Lake, YT.

Parmigan Airways Limited – Reinstatement of Group C authority at Yellowknife, NWT.

Northward Airlines Limited – to add the points Fort Norman and Fort Franklin, NWT., to Class 3 licence.

Nordair Limited – to serve the additional points Arctic Bay/Strathcona Sound and Pond Inlet, NWT., to class 3 licence.

Nahanni Helicopters Limited – to add Group A-RW to existing Group B-RW and C-RW authority at Fort Simpson, NWT.

Air Providence Ltd. – to operate a Class 9-4, Group A (restricted to two aircraft) International charter service from a base at Fort Providence, NWT.

Wolverine Air Ltd. – to operate Group B aircraft in addition to existing Group A authority from a base at Fort Simpson, NWT.

Simpson Air Ltd. – to operate a Class 3, Groups ABC to the points Fort Simpson and Fort Liard, NWT, and Fort Nelson, BC.

Richard G. Bond – Amendment to licence to permit seasonal operations from May 1 to October 1 of each year from a base at Whitehorse, YT.

Arctic Air Ltd. – Reinstatement of Licence No. ATC 2010/70 (NS) a Class 3, Group B and D service.

Edkins Aviation Ltd. – to operate a Class 7 FT, Group A from a base at Fort Smith, NWT.

Austin Airways Ltd. – to add additional point of Sanikiluaq Harbour (Belcher Islands) to Class 2 licence.

Survair Limited – Temporary authority to operate a charter service on a toll per unit basis between Great Whale and Belcher Islands.

Nahanni Air Services Ltd. – Deleting the condition which restricted the licensee to two Group B aircraft.

Air Providence Ltd. – to operate for two years a Class 3 Group A service to the points Fort Providence, Hay River, Pine Point, Fort Smith, Fort Simpson, and Yellowknife, NWT., with no non-stop flights between Yellowknife and Fort Simpson/Hay River/Fort Smith.

Transair Limited – Add Whitehorse, YT., to Class 2, Groups EF service for a two year period. Each flight serving Whitehorse must also serve Churchill, Man. Application to renew must be submitted not less than 90 days before expiry date.

Nordair Limited – Add the point Strathcona Sound to Class 2 licence.

Kenn Borek Air Ltd. – to operate a Class 9-4 charter service from a base at Inuvik, NWT., using Group C aircraft.

Nordair Limited – Reinstatement of authority to serve Pelly Bay and Coral Harbour on Class 3 licence.

Keewatin Arctic Camp Co. Ltd. – to operate a Class 4 (restricted) charter commercial service to 10 hunting and fishing camps from a base at Henik Lake, NWT.

Central Mortgage and Housing Corporation (CMHC)

Responsibilities

The responsibilities of CMHC include the designing of housing, preparation of town development plans and drafting planning legislation as requested from time to time by the Department of Indian Affairs and Northern Development; financing of housing under the terms of the National Housing Act; and the training of native personnel in the management of housing projects and the delivery of NHA programs, and the provision of technical assistance to native groups.

Review of 1975-76

Yukon

In 1975, a total of 292 new housing units were financed under the National Housing Act, more than three times as many as were financed in 1974. Of these, 116 were under the insured lending provisions by approved lenders and 176 by CMHC. Of the units approved by CMHC, 65 were under the Assisted Home Ownership Program, 81 in a low-rental project, and 30 three small public housing projects.

Loans for 75 existing housing units were made in 1975, 72 of which were financed by the approved lenders and three by CMHC.

Thirty new housing units were financed under Section 43 of the National Housing Act in 1975. Financing for approximately 10 additional units has been provided in the 1976 Capital Budget of CMHC.

The Yukon Association of Non-Status Indians was given a grant of \$127,500 for an Emergency Repair Program. Sustaining grants of \$30,000 were given to the Yukon Association of Non-Status Indians, to enable them to develop their capabilities in the housing field and to undertake a housing needs survey.

Northwest Territories

Loans for 501 new housing units were approved in 1975, an increase of 130 per cent over the 216 approved in 1974. Of these, 88 units were financed by the approved lenders and 413 units by CMHC. The greater part of the CMHC activity

arose from public housing projects, which accounted for 274 units. The balance was made up of 76 units in low-rental projects and 52 through CMHC's residual lending program.

Twenty-two existing housing units were financed in the past year; 14 by approved lenders and eight by CMHC.

Under Section 43 of the NHA, 274 family units were financed in 1975. Provision has been made in the Capital Budget for 1976 for financing between 165 to 170 additional units.

Grants totalling \$211,450 were approved to the Métis and Non-Status Indian Associations of the Northwest Territories for the Emergency Repair Program.

Partnership Activities — It is anticipated that any activity under Section 40 of the National Housing Act, in the Territories will be applicable only for the construction of senior citizens' housing.

Total Activity Approved in 1975

| | No. of loans | No. of units | Hostel beds | Amount (\$000) |
|-------|-----------------|-----------------|----------------|-------------------|
| Yukon | 148 | 292 | — | 9,932 |
| NWT | 89 | 501 | 68 | 19,496 |

Long-term Plans

The facilities provided under the National Housing Act and the services of Central Mortgage and Housing Corporation will be made available wherever and whenever necessary.

Solutions to four difficult problems are being sought: the enormous cost of utilities; the high cost of maintenance; the high cost of construction, because of shipping costs; and the short construction season.

Crown Assets Disposal Corporation (CADC)

Responsibilities

Crown Assets Disposal Corporation is responsible for the sale of surplus assets reported by government departments and agencies operating in northern Canada and under a long-standing agreement conducts the sale of United States Government surplus property located at DEW Line sites and other northern establishments. The Corporation also has an agreement to act as agent of the Government of the Northwest Territories in the sale of their surplus assets.

Review of 1975-76

Normal sales were conducted during the summer and autumn at locations in the Yukon and Northwest Territories. Incidental items of US surplus property located at DEW Line Stations were sold to individuals or organizations operating in the area.

Plans for 1976-77

The Corporation will conduct normal sales operations and be ready to assist in any special disposal problems that may arise at Canadian or US establishments.

Long-term Plans

The Corporation will continue to provide a service to Federal Government Departments, the Government of the Northwest Territories and United States Government Agencies, with respect to the sale of their surplus assets located in the North.

Department of Communications (DOC)

Responsibilities

The mandate of the Department of Communications is to foster the orderly development and operation of telecommunications for Canada in the domestic and international spheres. This includes: recommending national policies and programs with respect to communications services for Canada; promoting the development and efficiency of Canadian communications facilities; assisting Canadian communications systems to adjust to changing conditions; allocating radio frequencies to permit the orderly use of radio communications; protecting Canadian interests in international telecommunications matters; and co-ordinating telecommunications services for departments and agencies of the Government of Canada.

Review of 1975-76

Northern Co-ordination

The Department continued to be involved with the various arms of the Advisory Committee on Northern Development (ACND), and played a leading role in co-ordinating northern communications planning.

Implementation of the Yukon Territorial Communications Project, which was set up to bring about an integrated VHF mobile coverage and trunking system for federal and territorial public safety agencies in the Yukon, was begun during the year. The Yukon Department of Highways and the RCMP began to develop their part of the system and will be joined in 1976-77 by the Yukon Lands and Forest Service of DIAND, and Yukon Territorial departments. Local mobile coverage was made available along the Yukon portion of the Alaska Highway, the Whitehorse-Yukon River Road and the Klondike Highway, while partial coverage was introduced along the Dempster and Campbell Highways.

The Department was active in the ACND interdepartmental communications committees in Whitehorse (under the Federal interdepartmental Co-ordinating Committee) and Yellowknife (under the NWT Co-ordinating Committee). By bringing

Bell Canada directly into this second group, the Department was able to help resolve a number of local telecommunications problems. And in the Yukon, the Department assisted the Territorial Government and Telesat Canada in arriving at a negotiated agreement to bring CBC television service via Anik satellite to the small community of Teslin. Under the terms of the agreement, three other small communities will also be receiving this service.

Native communications is another of the Department's main concerns north of 60°N. In the Yukon, DOC chairs the Co-ordinating Committee of the Native Communications Program of the Department of the Secretary of State for the Ye Sa To Communications Society, and advises the Society on various aspects of electronic communications. The Department plays a similar role in the NWT, through its membership in the Co-ordinating Committee for the Communications Society of the Western NWT.

Management of the Radio Frequency Spectrum

The Department is responsible for assigning radio frequencies and issuing radio licences under the Radio Act. In the North, this service is provided at three district offices in Yellowknife, Ft. Smith and Whitehorse. The office at Ft. Smith also operates a monitoring station. Consideration is being given to setting up a monitoring station at Whitehorse, as well, and during the year, tests were carried out to determine what radio communications could be heard there that could not be picked up in Ft. Smith.

As in other parts of Canada, there was a dramatic increase in both Territories in the number of licences granted in the general land mobile and general radio services categories. In the Yukon, this was due in large part to increased activities in the mining industry. In anticipation of possible pipeline developments, the Department was studying the need for expanded communications services along the Mackenzie Valley. The use of private airstrips for oil and gas exploration activities, which require low frequency aeronautical navigation beacons, has put a high demand on the relatively scarce frequencies used for these facilities. The

Department has had to use computerized techniques to find suitable frequencies for these navigational aids.

Financial Contributions

Because the cost of providing high quality satellite telephone service to northern communities is far in excess of the revenues earned, the Department entered into an agreement in 1973 with Bell Canada to fund a portion of the total cost of providing such service by guaranteeing the carrier a minimum annual revenue from government users. The nine communities in the NWT now covered by the agreement are: Pangnirtung, Igloodik, Baker Lake, Coral Harbour, Rankin Inlet, Cape Dorset, Pond Inlet, Eskimo Point and Sanikiluaq (Belcher Islands). During the year, DOC began a program of providing financial assistance to other federal agencies to encourage greater use of business communications at these nine locations. This arrangement is intended to reduce the price of northern business communications, which would otherwise be very high. Resulting increased use by government users will reduce the amount of annual revenue that must be guaranteed to Bell by DOC.

The troposcatter terminal at Frobisher, which had been operated by CNT with DOC financial support, was phased out at the end of April 1975 and its assets sold to the Village of Frobisher. The services that were provided by this terminal (and by the Polevault North System, of which the terminal was a part) are now delivered through the Anik satellite system. In the western NWT and the Yukon, the Department continued to support CNT (\$90,000 in 1975-76) to help it maintain the Mackenzie Valley Poleline which runs between Inuvik and Ft. Smith. And to encourage Bell to accelerate the installation of HF telephone service to Hall Beach in the eastern NWT, the Department agreed to share the installation costs.

Research

Two research and development projects at the Department's Communications Research Centre (CRC) have direct application to the North, as well as to other remote areas of the country. One involves the development of an automatic HF system without the need for operators, that could be fully integrated with the switched telephone facilities within remote communities, with the Trans-Canada Telephone System, and also with trail radios. The Integrated Northern Communications Project, begun in early 1975, is aimed at developing an upgraded HF radiotelephone service that would approximate the quality of satellite communication, but would cost less. Because of the relatively high cost of satellite service and the great distances between northern communities, it appears that an improved HF radiotelephone service would have a useful role to play in the North for some time yet.

The second CRC project with northern applications is the Inuit Trail and Remote Camp Radio Project. Inspired by a brief presented to the Minister of Communications and the Secretary of State by the Northern Quebec Inuit Association, which listed trail and remote camp communications as a high priority, the project's objective is to develop a reliable radio system that will allow Inuit fishing and hunting parties to maintain continual contact with their home communities. The system will consist of a centrally-located automatic repeater which will operate simultaneously in both VHF and HF frequencies. The travelling party will carry both HF and VHF radios, the former being used for distances too great to be spanned by the line-of-sight VHF mode. Development of the prototype system was essentially complete by March 1976, and must now be tested under operational conditions in the field.

DOC's Central Regional office, headquartered in Winnipeg and responsible for most of the NWT, has been involved in another research project related to trail radios, the Remote Power Supply Project. In response to the relatively high cost of gasoline generators and replaceable batteries in the North and the need for a light, portable source of electrical energy to

power trail radios, the Regional Office undertook to evaluate various power sources to find the one that would perform best under difficult northern conditions. Solar generation was chosen as the most practical method and a number of solar panels were tested at appropriate northern latitudes, where sunlight is scarce in the winter months. The panel chosen was matched with rechargeable nickel-cadmium batteries (the most hazard free for portable operations) to store the electrical power and the unit was put through a variety of tests with a transmit-receive radio simulator. It was found that to maintain the necessary transmission and monitoring periods during the winter months, the solar panel would have to be supplemented with an additional battery source. At other times of the year the panel alone provided sufficient power. Further testing will be carried out.

Satellite Services

In 1975, Bell Canada established a new exchange, served by satellite, at Nanisivik (Strathcona Sound) on the northern tip of Baffin Island. The small, transportable Anikom terminal, installed and operated by Telesat Canada, links the remote mining settlement with the rest of Canada. Weather information gathered from around the area will be brought in by satellite to help schedule the movements of ore-carrying ships through this rugged, ice-infested area. The high quality satellite service will give management an up-to-the-minute picture of ice conditions and allow them to schedule shipping to take advantage of the best conditions. Shortly after the exchange was installed at Nanisivik, the neighbouring community of Arctic Bay was linked to it by a VHF radio system. This gave the residents of Arctic Bay access to the Anik system for long distance calling. At the same time, free local calling was established between the two communities. The Department assisted DIAND in negotiating the financial arrangements for this link with Bell Canada.

During the year, Bell Canada increased the number of circuits available at Frobisher and Resolute, the two heavy stations in the NWT, to accommodate the increased traffic demand.

In December 1975, the CBC Northern Service began distributing programming to existing stations on its new Trans Arctic Radio Network. This network, which uses a separate carrier in one of the television channels of the Anik satellite, provides CBC radio service to the communities Igloolik, Cape Dorset, Pangnirtung, Polo Inlet, Rankin Inlet, Eskimo Point, Baker Lake, Resolute and Cambridge Bay, in NWT. English and Inuktitut programming for this satellite network originates from the CBC Northern Service production centres at Montreal, Frobisher, Inuvik and Yellowknife. The CBC's Accelerated Coverage Plan (ACP) extended radio television service during the year, to all the above communities (except for Rankin Inlet and Baker Lake which already had service) as well as to Coppermine. Further details on the ACP and the CBC's other northern activities can be found in their section in this report.

The experimental Communications Technology Satellite (CTS) was launched in January 1976. A joint Canadian-American project, the CTS satellite is the most powerful ever put into orbit. During its two year life span, it will be used to demonstrate high-powered television and other transmissions to small low-cost earth stations, to flight-test the advanced technology subsystems of the spacecraft itself, and to further develop and demonstrate the activities of Canadian industry in space communications. Because of their high power, which permits the use of small, relatively low-cost ground stations, CTS-type satellites are expected to have special applications for the North, and for other remote areas of Canada. A number of these applications will be tested by the series of social and technical communications experiments to be carried out by a variety of agencies including governments, universities and private groups. The experiments are scheduled to begin in April 1976.

Terrestrial Services

Notwithstanding the rapid growth of satellite communications in the North, terrestrial facilities continue to be widely used by the common carriers, especially by CN Telecommunications which provides public telephone and other services in the Yukon and the NWT west of 102° longitude. In the Yukon, CNT made the following improvements to its main telecommunications routes and systems:

- the open wire land line to Clinton Creek was replaced with a 60 channel radio system;

- the microwave system from Grande Prairie to Whitehorse, was expanded from 600 to 960 channels;

- a six channel radio system was extended from Faro to Canadian Mine Services, which are developing the Kerr-Addison lead-zinc site;

- the capacity of the radio system in Old Crow was upgraded from 20 to 24 channels;

- forty miles of open wire line along the Alaska Highway was decommissioned with the installation of a microwave breakout to serve the community of Teslin;

- improvements were made to the local telephone exchanges at Ross River, Beaver Creek and Whitehorse; and CNT's public mobile telephone service was further expanded with additional base station facilities being added at Elsa, Faro, King Solomon, and Fox.

The following improvements were made to CNT's routes and systems in the NWT:

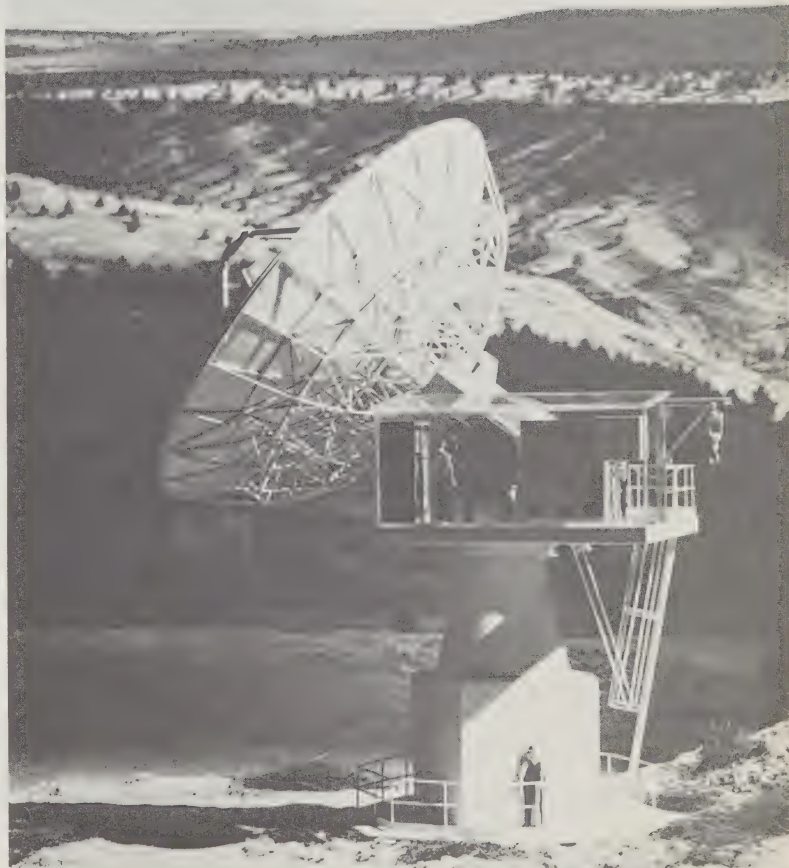
- the capacity of the Ft. McPherson radio system was upgraded from six to 24 channels;

- the Aklavik system was expanded from two to six channels;

- the single channel system from Echo Bay to Port Radium was greatly enlarged to accommodate 24 channels;

- dial telephone service was installed in Paulatuk, where long distance service is brought in via DEW line facilities; and the local telephone exchanges at Aklavik, Pelly Bay and Yellowknife were expanded or improved.

In the Bell system in the eastern Arctic, local exchange service was established at Roughton Island and Nanisivik; and was



Satellite earth stations enable small communities to obtain communications services such as colour television, radio and telephone via Anik satellite.

mentioned earlier, an HF toll station was installed in Hall Beach. Both Hall Beach and Broughton Island are connected to the Frobisher HF base station.

Plans for 1976-77

Northern Co-ordination

The Yukon Territorial Communications Project is expected to be completely operational by the last quarter of 1977. The integrated network, to be owned and operated by the YTG on behalf of all other users, will have cost about \$1.2 million when complete: the integrated system approach will have saved the Government over \$1 million.

Management of the Radio Frequency Spectrum

As an aid to small and remote communities, which applies to most communities in the North, DOC is developing new simplified application forms for a Technical Construction and Operating Certificate. The forms will be suitable for all low-power transmitters, both AM and FM. They will set easy-to-meet technical requirements for these transmitters and will speed up the processing of applications in the low power transmitter category. The new FM form is expected to be ready towards the end of fiscal year 1976-77.

Financial Contributions

Negotiations are continuing between the Department, Bell Canada and the Government of the NWT, to designate a tenth northern location to receive Thin Route telephone service under the Minimum Annual Revenue Guarantee agreement. Agreement is expected to be reached in 1976.

DOC's contributions to CNT for the operation of the Mackenzie Valley Poleline will cease in the 1976-77 after a final contribution of \$40,000. The final extension of high-quality microwave service to Inuvik from Hay River will have rendered the Poleline obsolete.

Research

The Integrated Northern Communications Project will continue through 1976-77 with contracts being let to a number of private firms for the development of individual components. Canadian General Electric is developing a system called SYNCOMPEX, which greatly improves the quality of HF transmissions and which uses the digital mode of transmission, thus bringing costs down considerably. Bell Northern Research is expected to work on several aspects of the project, including its compatibility with the Trans-Canada Telephone System. The Department hopes that the involvement of this Bell affiliate will help ensure that the resulting system will be acceptable to the carriers.

The Inuit Trail and Remote Camp Radio Project will be testing its prototype system during the year in a Northern Quebec Inuit village, to be selected after consultations with the Northern Quebec Inuit Association and the villagers themselves. The equipment will be used by the Inuit during their hunting and fishing excursions. There may also be some development of certain elements of the operational system towards the end of 1976-77.

A final report on the Central Region's Remote Power Supply Project will be submitted following additional testing of the solar panel.

Satellite Services

During 1976-77, Bell plans to add 12 new telephone circuits to existing ground stations in the eastern NWT, to meet the growing demand for toll service at a number of locations. The annual rental fee charged by Telesat Canada for a satellite circuit is \$7,500. Bell Canada is reluctant to expand satellite service to additional communities because of the increased losses this would involve, and the Department is considering ways of extending high-quality service without greatly increasing the burden on Bell's southern subscribers who have been cross-subsidizing Bell's northern operations.

CNT plans to start using Anik satellite transmission facilities to improve telecommunications services in three western NWT communities served only by HF radio systems: Sachs Harbour, Holman Island and Snowdrift. For this purpose, CNT will sub-lease a portion of Bell Canada's

northern service second channel, and will lease the necessary ground station equipment from Telesat Canada.

The Yukon Government and Telesat Canada have come to an agreement for bringing CBC television via satellite to four small Yukon communities which, because of their small populations, would not have qualified for coverage under the CBC's Accelerated Coverage Plan. The communities, which are Teslin, Carmack, Haines Junction, and Beaver Creek, will each have to pay \$1,000 a year towards the cost of this service themselves (plus an initial capital cost of \$750) with the remainder (about \$13,000 per community) being paid by the Territorial Government. Three other small Yukon communities, Destruction Bay, Burwash Landing and Carcross, will receive CBC television service under similar financial conditions via terrestrial facilities. Except for Teslin, which received a CRTC licence in February 1976, all the communities are expected to be licensed by the CRTC and to receive CBC's northern television service sometime during 1976-77.

Telesat Canada plans to begin leasing satellite circuits to the Ministry of Transport (MOT), to enable them to carry out their responsibilities in the North more effectively. MOT will use Anikom circuits to reduce the cost and improve the coverage and reliability of navigation and traffic control in northern Canadian waters. Information from the south will be routed from manned centres to automatically-operated coastal stations by Anik satellites, thus improving ship-to-shore links.

Terrestrial Services

Bell Canada plans to install a local exchange in Hall Beach, recently provided with HF toll facilities, and to modernize the HF radio base-station at Frobisher, which serves as the base-station for the HF network in the eastern NWT.

CNT plans the following improvements to its routes and systems in the western NWT:

- the Inuvik-Parsons microwave system will be upgraded from 120 to 300 channels and the Parsons Taglu system from 60 to 120 channels;

the Hay River-Ft. Simpson-Norman Wells microwave system will be extended to Inuvik;
 the Ft. Providence to Yellowknife system will be expanded from 120 to 600 channels;
 the Hay River to Ft. Simpson microwave system will be upgraded from 300 to 960 channels;
 the new 960 channel microwave system under construction between Ft. Simpson and Ft. Nelson, BC, will be operational by the summer of 1976;
 the local telephone exchanges at Pine Point, Ft. Simpson and Spence Bay will be expanded; and
 local telephone exchanges will be installed at Holman Island and Snowdrift at the same time that Anik long distance service is introduced.
 The following improvements will be made in the Yukon during 1976-77:
 breakouts along the Grande Prairie-Alaska microwave system will provide expanded and better long distance circuitry at Destruction Bay, Haines Junction and Beaver Creek;
 the small community of Pelly Crossing will receive local dial and long distance service by late 1976; and
 the local telephone exchanges at Haines Junction and Dawson City will be expanded.

Long-term Plans

The Department's long-term goal is to provide northerners with the same range and quality of basic telecommunications services that exist in southern Canada, with particular attention being given to the special needs and values of the native people. Satellite technology has made it possible to overcome with relative ease the vast distances in the North, and to bring high quality telecommunications broadcasting services to the most isolated communities. But despite these special qualities, satellite telecommunications remain relatively expensive, and the revenues generated by the small populations of the Territories are not sufficient to cover the cost of the new technology. Potential pipeline projects along the Mackenzie Valley and in the Eastern Arctic, and other development projects, may in time generate enough revenue to allow some telecommunications services to pay for

themselves. But in the meantime, the disparity exists, and the Department is examining ways of encouraging extended high-quality service without straining limits of cross-subsidization.

Department of Energy, Mines and Resources (EMR)

Canada Centre for Mineral and Energy Technology

Mineral Processing

Responsibilities

Filter press barren discharging to tailings areas from gold mill operations located near Yellowknife, NWT contain concentrations of cyanide that constitute a potential hazard to the water environment. Although the waste cyanide is not scientifically controlled at present, it is partially decomposed by the action of atmospheric oxygen and the sun during impoundment. To eliminate all possible danger to the aquatic life, research work was initiated to attempt to reduce the cyanide in the mill effluent to a projected specification level of 0.1 ppm.

Review of 1975-76

The Mineral Processing Section has undertaken the evaluation of acidification, chlorination and ion exchange techniques as promising routes for removing cyanide from solutions. Acidification plus aeration appears to be a satisfactory process, but for the most part, it seems to be just barely capable of reaching the specification objective. Oxidation of cyanide by chlorine may provide a viable alternative method when competing sulphur compounds are in minor concentrations, or as a final treatment procedure for overflows from other treatment methods, as for example, the effluent from open-air impoundments where bacterial decomposition of cyanide is promoted. Ion exchange appears to present a possible route for cyanide recovery from very dilute solutions, yielding a very low cyanide content and removing toxic heavy metals from solution.

Plans for 1976-77

A pilot plant has been installed and plans call for evaluating the acidification method using an aeration tower in conjunction with a hydrocyanic recovery unit. The reagents lime and caustic soda will be investigated for their effectiveness in recovering the cyanide for re-use in the plant.

Mining Research Laboratories

Review of 1975-76

During 1975-76 continued support was given to the mine inspectorate, DIAND, on dust sampling and evaluation procedures for northern mines. In addition to consultative services, dust sampling instruments were loaned and x-ray analysis of dust samples for quartz carried out. Some 100 quartz determinations were made on behalf of DIAND at the Mining Research Laboratories.

Plans for 1976-77

Continued support will be given to the dust sampling program in northern mines until northern facilities are established and are able to cope with dust survey requirements.

Surveys and Mapping Branch

Responsibilities

The Surveys and Mapping Branch is responsible for developing and implementing national programs in surveying and mapping. These programs involve the following support activities:

- the production, maintenance and distribution of topographical and special maps for administration, economic, human and physical geography, resources management, scientific research, defence and recreational purposes;
- the establishment and maintenance of a national network of geodetic control for topographical, engineering, cadastral, navigational, communication, military and scientific purposes, and the distribution of this data;
- the production and distribution of a national atlas to document the physical, human and economic geography and the appropriate geographical aspects of the history of Canada for use by governments, educational institutions and the public;
- the administration of cadastral (property) surveying of federal lands;
- the fulfilment of Canada's federal obligations regarding definition, survey and maintenance of political boundaries in Canada;

- the reproduction, distribution and library services for aerial photography and remote sensing data;
- the production, maintenance and distribution of aeronautical charts and publications for civil and military aviation; and
- the support for other federal programs requiring a wide range of surveying and mapping services.

The five main components of the Branch are: Topographical Survey, Legal Surveys, International Boundary Commission (Canadian section), Geodetic Survey, and Map Production.

The Director-General of the Surveys and Mapping Branch is the Chairman of the Interdepartmental Committee on Aerial Surveys. The Branch also provides the Secretariat for the Canadian Permanent Commission on Geographical Names.

Geodetic Survey

Responsibilities

The Geodetic Survey is responsible for expanding and maintaining primary frameworks of horizontal and vertical control and establishing the lower-order control survey networks and special surveys required for other federal government agencies, industry, environmental studies, engineering and geosciences, national security, the national mapping program and the orderly development of the North, and for handling requests for geodetic data.

Review of 1975-76

In the Northwest Territories, the Mackenzie River first-order level line was extended north from the vicinity of Norman Wells to a point 60 miles south of Arctic Red River. Work on the Doppler satellite positioning, which began in 1974-75, continued. Ten new stations were established in the Yukon and eight in the western part of the District of Mackenzie. The existing network of horizontal control on Banks Island and the western half of Victoria Island was improved and additional control was established for the 1:50,000 mapping program. In the western portion of the District of Mackenzie, additional vertical and horizontal control was established for the 1:50,000 mapping program.

Plans for 1976-77

The Mackenzie River levelling project will be continued to the Arctic Red River. Work on the Doppler satellite positioning project will continue with points to be established at regular spacing in the Districts of Mackenzie and Keewatin to form a very accurate survey control network for the area. In the southern portion of the boundary area between the Yukon and Northwest Territories, existing lower-order survey control will be improved and additional vertical and horizontal control provided for the 1:50,000 mapping program.

Long-term Plans

Long-term plans for operations in the North include the extension, densification and improvement of the horizontal and vertical control frameworks, the improvement and extension of the existing lower-order control survey networks and the provision of control for the 1:50,000 mapping program in areas still unmapped at that scale. Extension of the primary level line along the Dempster Highway to join up with the Mackenzie River line at Arctic Red River is planned for 1977-78. The line will eventually be extended to arctic tidal level at Tuktoyaktuk or Cape Perry. The re-computation of the horizontal control networks in Canada is progressing on schedule. The primary network will be completed by the end of 1977. The national network of Doppler stations which will be completed in 1976 along with extensive improvements to the existing primary framework, will be incorporated into the computations to give the highest possible accuracy to the updated survey data. After the primary network is completed, the lower order surveys will be improved, extended and integrated into the primary framework by areas and priorities, to form a national reference system.

International Boundary Commission

Responsibilities

To maintain at all times an effective boundary between Canada and the United States, and to determine the position of any part thereof when boundary questions arise between the two governments.

Review of 1975-76

No work was scheduled nor required in the North during 1975-76.

Long-term Plans

To carry out the continued maintenance of the international boundary in an effective state of demarcation.

Legal Surveys

Responsibilities

To carry out surveys for land or resource transactions connected with the administration and development of public or other lands.

To ensure the competence of the property surveys, land descriptions and plans made under the Canada Lands Surveys Act and other acts and regulations, and to manage such surveys on request.

To fulfill the federal obligations regarding definition, survey and maintenance of provincial and territorial boundaries of or in Canada.

Review of 1975-76

Yukon Territory

For the Department of Indian Affairs and Northern Development summer residential subdivisions were surveyed at Teslin Lake (88 lots), Tagish Beach (six lots) and at a residential subdivision on the outskirts of Whitehorse at Haeckel Hill (20 lots, three-five acres each).

A re-survey of two lots at Lake Laberge Indian Reserve and a survey of two lots at Whitehorse, including topographic work, were made.

An individual lot was surveyed at Mayo for the Forestry Service.

The survey of the relocation of Highway No. 3 around Dawson Airport was completed for the Territorial Government.

Northwest Territories

Surveys of one or two lots were made for power plants, fuel sites and housing at Pelly Bay, Coral Harbour, Nahanni Butte and Frobisher, for the Northern Canada Power Commission.

Large single lots were surveyed for the Forestry Service for fuel cache sites at Colville Lake, Hill Island Lake, Doucet Lake, Tarsque Lake and Disappointment Lake.

For the Royal Canadian Mounted Police, surveys were made of one or two lots for housing and office sites at Frobisher, Fort Franklin, Fort Rae, Aklavik and Inuvik.

For Parks Canada, surveys were made of two lots for buildings and an airstrip at Nahanni Butte.

For the Department of Energy, Mines and Resources, the Co-ordinated Survey Area at Inuvik was continued, as was an extension of the Yellowknife Co-ordinated Survey Area (both to be completed in 1976-77). A new Co-ordinated Survey Area at Frobisher was begun. Co-ordinated control survey areas established in the major settlements in the North feature an integrated system of permanent reference monuments which can be used to facilitate and correlate in these settlements all future surveys required for engineering, mapping, cadastral and other development purposes. Because of the referencing role of these monuments, extraordinary precautions, such as setting markers in cast iron wells beneath city streets, are taken in an attempt to ensure that they will not be disturbed by construction, grading or snow plowing work.

Plans for 1976-77

Yukon Territory

For the Department of Indian Affairs and Northern Development, a major project will be the survey of 133 recreational lots at seven locations around the perimeter of Marsh Lake. Because of the raising of the reservoir water level, six lots at Fish Lake will be relocated. Individual lots will be surveyed at Little Salmon Lake (seven lots) and at Tay Lake (one lot).

ACTIVITIES IN THE NORTH

GEODETIC SURVEY 1975 - 76

Doppler +

Secondary Control

1st. order —

Vert. Control..... —

The map displays the northern regions of Canada, including the Northwest Territories, Yukon, and parts of British Columbia, Alberta, Saskatchewan, and Manitoba. Key geographical features include the Arctic Ocean, Beaufort Sea, Hudson Bay, and the Davis Strait. Major cities and towns are labeled, such as Inuvik, Tuktoyaktuk, Whitecourt, and Yellowknife. The map also shows the locations of various survey points marked with crosses and a rectangle, indicating the extent of the geodetic survey activities conducted in 1975-76.

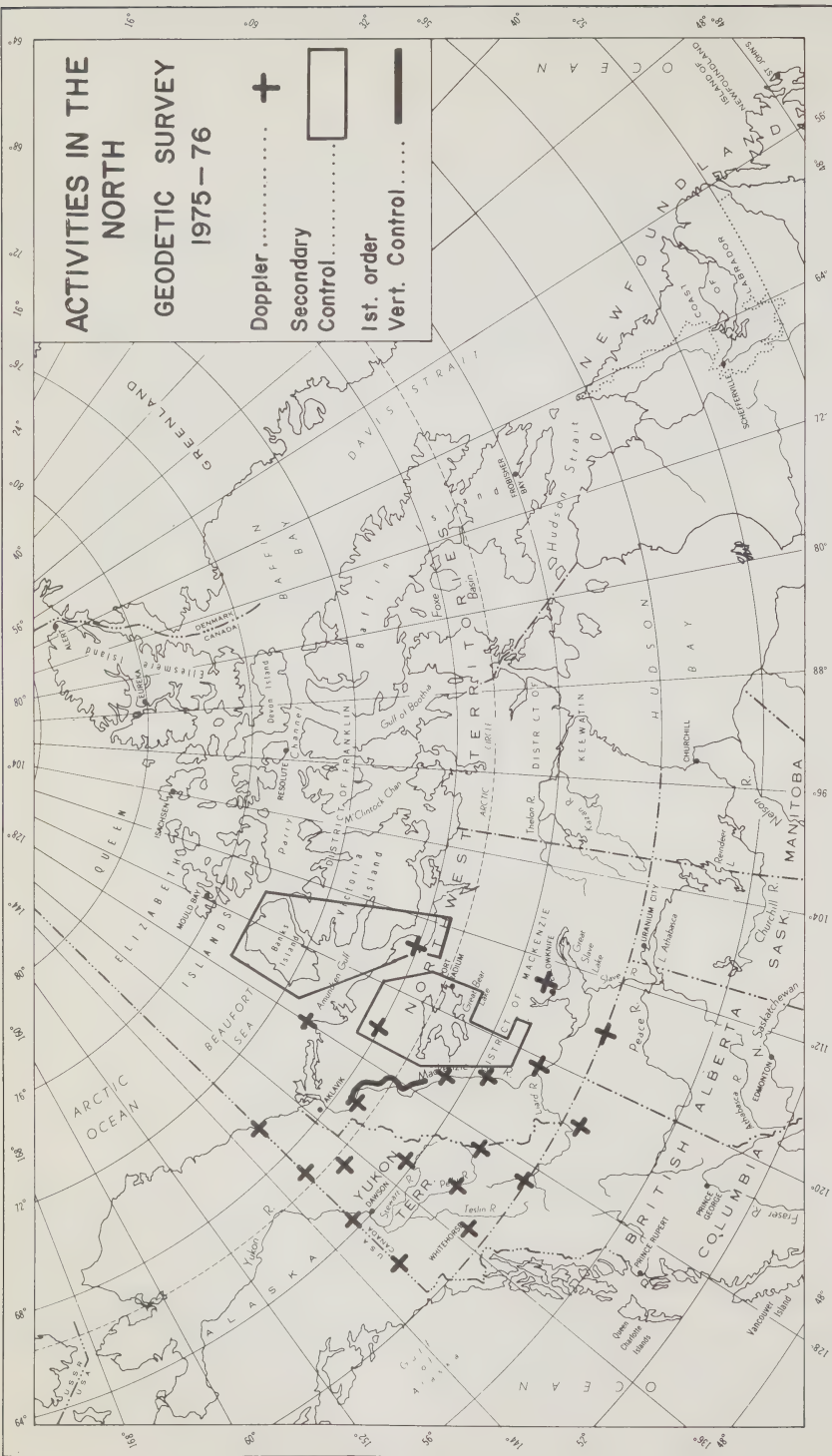
ACTIVITIES IN THE NORTH

GEODETIC SURVEY 1975 - 76

Doppler +

Secondary Control

1st. order Vert. Control —

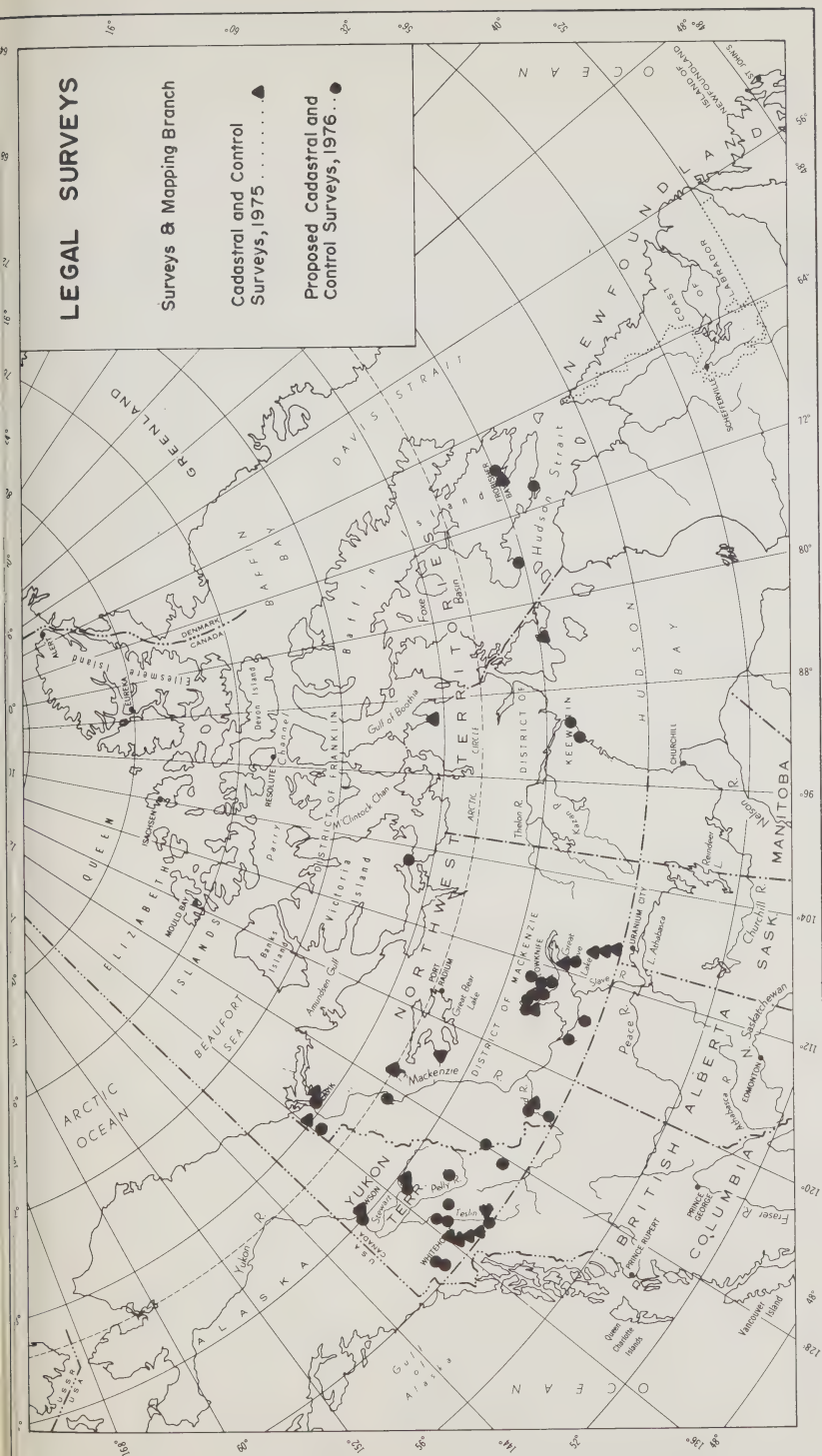


LEGAL SURVEYS

Surveys & Mapping Branch

Cadastral and Control
Surveys, 1975 ▲

Proposed Cadastral and
Control Surveys, 1976 . . . ●



Individual lots will be surveyed for the Forestry Service including one lot for fuel cache and helicopter pad at Frances Lake, two lots for residence and fire station at Teslin and the re-surveys of one lot at Carmacks, at Mayo (four lots), at Haines Junction (three lots) and at Dawson (15 lots).

For the Department of Public Works, the survey for the relocation of Yukon Highway No. 1 between Mile 866 and 879 will be made.

Northwest Territories

For the Department of Indian Affairs and Northern Development, subdivision surveys for cottage lots will be undertaken at Prelude Lake (18 lots), Pickerel Lake (six lots), Sand Lake (approximately 15 lots) and Awrey Lake (six lots).

For the Royal Canadian Mounted Police, there will be surveys of individual lots for housing and office sites at Cape Dorset, Fort Good Hope, Rankin Inlet, Lake Harbour and Cambridge Bay.

Two lots for housing will be surveyed at Chesterfield Inlet for the Northern Canada Power Commission.

For the Forestry Service, individual lots for a water tower, helicopter landing and fuel cache sites will be surveyed at Fort McPherson, Awrey Lake, Kakisa Lake, Rutledge Lake, Tungsten Airport, Nahanni Butte, Fort Liard, Hearne Lake, Marion Lake and at Mile 96, NWT Highway No. 1.

For the Department of Public Works, individual lots will be surveyed for storage tanks and a magnetic observatory station at Frobisher.

For the Department of Energy, Mines and Resources, the Co-ordinated Survey Area at Inuvik and Frobisher will be completed as well as the extension and densification of the Co-ordinated Survey Area at Yellowknife. An inspection and examination of the condition of the survey monuments in the Yellowknife Co-ordinated Survey Area will be carried out.

Long-term Plans

These plans are dependent upon the planning and development of other government departments, chiefly Indian Affairs and Northern Development. It is proposed to carry out subdivision surveys in the settlements in the North to promote and facilitate development of these areas. Similarly, surveys of group lots, camp sites and other parcels will be made along highways as development is undertaken by the Territorial Governments. The laying out of lots for airstrips, the location of navigational aids and similar work will be carried out in conjunction with Transport Canada. Co-ordinated control survey areas will continue to be established in the major settlements in the North.

Topographical Survey

Responsibilities

To produce, maintain and distribute topographic maps of Canada for general purposes at scales of 1:250,000 and larger, appropriate to the needs of administration, urban and resource development, defence and recreation; to provide a national library for aerial photography and remote sensing data, to promote their use and to provide a service for processing, reproduction and distribution; to provide technical and administrative support to the Interdepartmental Committee on Air Surveys.

Review of 1975-76

In 1975, a total of 46,000 line miles of aerial photography was flown for 1:50,000 new and revision mapping. Indexes showing the present status of aerial photography may be obtained from the National Air Photo Library, 615 Booth Street, Ottawa, Ontario K1A 0E9. Topographic map indexes are also available from the Canada Map Office at the same address.

In the North, 410 new 1:50,000 line maps and 99 new photomaps were completed. In northern Canada, some maps were revised by the addition of data located on LANDSAT (Land Satellite) imagery.

During the year, the Directorate continued with its plan to carry out part of its new mapping program to the data base stage only. In the data base concept, aerial photography, field control computations and photogrammetric block adjustments are completed for all map sheets in the program, but only those needed immediately are carried on the map compilation and completion. Data for the remainder is stored in digital form until specifically required for map compilation or engineering studies. This reduces the response time of a request for a particular map area. A new topographical series at 1:30,000 has been started to provide a resource base map for the Yukon and Northwest Territories. Approximately 10 sheets will be produced each year.

LANDSAT mosaics, at a scale of 1:2,500,000 were published covering a portion of Canada in 12 sheets. These are available from the National Air Photo Library.

Planning, monitoring and inspection surveying and mapping contracts with the survey industry on behalf of various federal departments and agencies were carried out.

Plans for 1976-77

It is anticipated that 380 new 1:50,000 line maps of areas in northern Canada will be plotted by Topographical Survey during 1976.

Aerial photography will be obtained for 1:50,000 mapping of possible pipeline routes in the Northwest Territories and mineral development areas in the Yukon Territory.

A brochure is being prepared on wilderness canoeing which should encourage this form of tourism in the North. Care of safety on the waterways is stressed.

Long-term Plans

The long-term plans of the Directorate are:

- to increase substantially the present map coverage of Canada at 1:50,000 scale, with areas of high resource potential being mapped first; and to review where necessary, all published topographical maps.

The work involved in the production of new maps includes the identification of a network of points (spaced at about four-mile intervals) for which the precise latitude, longitude and height above sea level are determined photogrammetrically. This network will cover all areas of the North, and through it will be used principally for mapping, it may have secondary uses, for example, the location of mineral claims and property boundaries. The completion of this network will take about three years.

Map Production

Responsibilities

The Directorate is responsible for the drafting and printing of maps of the National Topographic Series; the production of small scale maps, aeronautical charts and flight information publications; the design and cyclic production of The National Atlas of Canada; toponymic (geographical names) services; the provision of cartographic support services to federal and provincial government departments and private agencies.

Review of 1975-76

The following new and revised National Topographic Series maps of northern Canada were printed in 1975-76: two revision multicolour maps at 1:50,000 scale; one revision at 1:250,000 scale; 19 new monochrome maps at 1:50,000 scale; 10 new photomaps at 1:50,000 scale. In the field of small scale mapping, the program of extending the International Map of the World (IMW) Series at 1:1,000,000 scale into northern Canada was continued, with 11 maps published. In addition, a prototype Territorial Resource Map at 1:30,000 scale was printed in the year, along with a map of Marine Waters of Arctic Canada at one inch to 60 miles. The publication of aeronautical charts and flight information publications continued. Products on scheduled cyclic revision include Visual Pilotage Charts, Enroute Charts, Enroute Supplement, Canada Air Pilot and Northern Supplement. Work on research and base maps for the fifth edition of The National Atlas of Canada continued.

Cartographic support was provided in the way of two Terrain Sensitivity maps at 1:1,000,000 scale in the Mackenzie Valley. As well, itinerary maps were produced in conjunction with the visit of H.R.H. Prince Charles to northern Canada. For the Polar Continental Shelf Project, the Sea Ice Atlas of Arctic Canada 1961-1968 was printed in November.

Toponymic work continued on revision of the gazetteers of Northwest Territories and Yukon Territory and on the publication of *Geographic Names of Northwest Territories*.

Plans for 1976-77

Publication of nine maps of the IMW Series in northern Canada is scheduled for the 1976-77 fiscal year, as well as the Transportation Facilities Northwestern Canada map (MCR 35).

In the topographic map series, 208 monochrome maps at 1:50,000 scale are scheduled for publication.

Long-term Plans

Long-term plans with regard to northern mapping are to assist in the publication of National Topographic Series maps, to complete mapping of northern Canada at 1:1,000,000 scale in the IMW series, to maintain production of small scale maps and up to date aeronautical documents, and to provide cartographic assistance to other governmental agencies engaged in northern activities. In this program, computer-assisted approaches to cartography will be used to a steadily increasing degree.

Earth Physics Branch

Responsibilities

The objective of the Earth Physics Service Activity is: "To ensure the availability of geophysical information concerning the configuration, evolution, structure and dynamical processes of the solid earth and the hazards associated with natural and induced geophysical phenomena with special reference to the Canadian land-mass". The Earth Physics Branch has the responsibility for meeting this objective. The Branch is organized into three operational Divisions: the Division of Seismology and Geothermal Studies, the Division of Geomagnetism, and the Gravity

and Geodynamics Division. Within this organizational framework five discipline-oriented Services carry out the mandate of the Branch throughout Canada, including the necessary operations north of 60°N.

Seismological Service of Canada

Responsibilities

The Seismological Service of the Division of Seismology and Geothermal Studies is responsible for determining the parameters of all significant earthquakes throughout Canada and for providing assessments of seismic hazards. Research on the structure and properties of the Arctic lithosphere is conducted by deep-sounding experiments (often in co-operation with the Polar Continental Shelf Project), by surface wave dispersion studies and by study of seismic wave velocities from Arctic earthquakes. Studies of the source mechanisms of moderate and large earthquakes in active seismic zones provide data for investigations of seismotectonic processes and for calculations of expected strong ground motions required for earthquake-resistant design of critical structures. To meet these objectives, a network of seismograph stations is maintained throughout Canada and field experiments on deep seismic sounding and microseismicity are conducted.

Review of 1975-76

Standard seismological observatories were operated at Alert, Mould Bay, Resolute, Frobisher, Inuvik, Yellowknife and Baker Lake. A regional observatory continued operation at Whitehorse and a new regional observatory was installed at Igloolik with co-operation from the staff of the Igloolik Research Laboratory. The strong motion seismograph continued operation at Fort McPherson. A temporary seismograph was operated for the Seismological Service on Somerset Island by a field party of the Geological Survey during part of the summer of 1975. The Yellowknife seismological array continued operation and an automatic telephone dialing and data transfer facility was added to send digital information on detected seismic events to an Ottawa computer on a daily basis.

Routine analysis of all detected earthquakes occurring in the Canadian North has continued. Bi-monthly lists of all detected earthquakes are prepared within about six months of their occurrence and final determinations are published in annual catalogues. Data reduction has been completed for the last two outstanding annual catalogues. A complete record of historical seismicity in Canada, north of latitude 60°N has been compiled and correlations of seismicity trends with other geophysical and geological features have been made. Detailed investigations of individual earthquakes in the Queen Elizabeth Islands have begun. The results of these studies are providing basic data for research on the seismotectonics of the Canadian North and essential data for assessment of earthquake hazards in resource development and transportation areas.

Interpretation of the long-range refraction data from the 1973 co-operative project with the Geological Survey in the Sverdrup Basin has been completed and the crustal profile data are being integrated with interpretation of the sedimentary section by the Geological Survey.

Plans for 1976-77

The present seismological observations will be maintained and a new regional observatory is tentatively planned for installation on Ellef Ringnes Island in the summer of 1976. The Yellowknife seismological array will continue operation. Its sensitivity and automatic detection facility will be assessed in terms of a potential for recording lower level northern Canadian earthquakes.

Analysis of earthquakes occurring in the Canadian North will continue on a current basis. A review of the seismicity of the North will be completed and a detailed investigation will be made of moderate earthquakes in the Queen Elizabeth Islands and earthquake swarm activity in the Sverdrup Basin. The interpretation of these results in terms of earthquake hazards to Arctic Islands pipelines will commence. An investigation will be made of the relationships between earthquake clusters and geological structures, sediment loads and gravity anomalies in the Beaufort Sea and along the Arctic continental margin.

A deep seismic sounding experiment will be undertaken in April 1976 in conjunction with the Arctic Ice Dynamics Joint Experiment. The project will determine the seismic wave velocities, anisotropy and lithospheric structure in the Beaufort Sea.

Long-term Plans

The seismological observations will be maintained and kept technologically up to date. Plans are being made for deployment of temporary regional observatories in a number of northern regions to improve earthquake detection and location accuracy. Cataloguing will continue of all earthquakes detected in the Canadian North. Studies of Arctic seismotectonics will continue and assessments of earthquake hazards will be extended to other regions of resource development and proposed pipeline routes.

Extension of deep seismic sounding studies of the Cordillera into the Yukon region is planned to investigate the northern Cordillera lithosphere structure and to attempt to explain patterns of geothermal anomalies and seismicity. Seismic sounding experiments in other regions of the North will be undertaken as required to assist interpretation of geological and geophysical phenomena. Tentative plans are being made for a multidisciplinary study of the Lomonosov Ridge to be co-ordinated with a United States proposal for a Nansen Drift Station Scientific Program. The study of the Lomonosov Ridge would include earthquake monitoring and a seismic reflection-refraction experiment.

Geothermal Service of Canada

Responsibilities

The Geothermal Service of the Division of Seismology and Geothermal Studies is responsible for determining the thermal regime of the Canadian landmass, particularly as it is related to geotectonics, the distribution in depth and areal extent of permafrost, the thermal properties of earth materials, and the potential for geothermal energy development. In line with these responsibilities, measurements of the thermal properties of earth materials are carried out in the laboratory and field measurements of temperature are carried out in drill holes.

Review of 1975-76

Studies of the underground thermal regime of northern Canada have been continued.

A program of deep borehole temperature measurements in wells either acquired from or suspended by resource companies has been continued. In the field season of 1975, some 17 new sites were logged for the first time making a total of 45 the number of northern wells logged during the year. As a result permafrost thickness measurements are now available for 70 sites in the Canadian North, which 32 are in the Arctic Islands and 25 in the Mackenzie Delta.

Shallow temperature observations in the Mackenzie Valley have been completed for the present and the emphasis switched to acquiring data in the Arctic Islands and the Keewatin area; in particular, through the TEP-2 program of the "Environmental-Social Program on an Arctic Pipeline", along the proposed Polar Gas pipeline route. Small programs of shallow temperature observations have been commenced with DIAND to investigate the frost heave of an artificial island at Tuktoyaktuk and with GSC at the Involute Hill south of Tuktoyaktuk.

Measurements of the thermal properties of rocks and soils, both frozen and unfrozen, are being made on a continuing basis. For many locations no cored material is available on which to make these measurements and drill-cuttings must be used instead. Research is continuing on improved techniques of determining *in-situ* thermal properties from measurements on the cuttings and the analysis of well-logs.

To investigate the effect of shoreline on permafrost distribution, measurements of underground temperature and thermal properties of rocks have been made at on- and off-shore sites at Little Cornwall Island, NWT, and in the Mackenzie Delta. The distribution of permafrost in the two areas is highly dependent on the surface history in the past hundred thousand years.

In a similar fashion investigations of offshore permafrost in the Beaufort Sea in conjunction with GSC, and the Beaufort Sea Project F-1 of Environment Canada have shown its dependence on past surface temperature history.

The possible occurrence of natural gas as a frozen hydrate is of increasing concern to northern drillers. Calculated equilibrium temperature curves have been used to predict the possible depth extent of hydrate for gases of different compositions in various areas of northern Canada. The analysis is similar in nature to an earlier attempt to predict the thickness of permafrost.

Plans for 1976-77

The program of geothermal studies will continue to keep pace with increasing resource development. Increasingly, new projects and analyses are multidisciplinary, combining geophysical and thermal data. Data acquisition for the production of an isopach permafrost map is continuing with the co-operation of DIAND and industry. Work will continue for the acquisition of further subsurface temperature data both onshore in the North and on the bottom of Arctic straits and channels. In the spring of 1975 a one-day seminar on the "Shallow Thermal Regime" was organized in conjunction with the GSC. A group of specialists was gathered together to determine the major deficiencies in our understanding of the subject. The general consensus of the meeting was that further field measurements are still very necessary because theoretical methods are not yet adequate to predict the thermal regime and that a very great need exists for additional studies of coupled heat and mass transfer under northern conditions. Both of these needs will be partially met in 1976 through the TEP-2 program of the "Environmental-Social Program on an Arctic Pipeline", coordinated by the Geothermal group. Numerical techniques are being applied to the problems of the thermal disturbance of the rock surrounding a well during drilling. An understanding of the physics involved and a mathematical description will maximize the derivable information from the Service's logs and provide a basis for improved drilling techniques and the design of future production wells on- and off-shore in northern Canada.

Long-term Plans

A longer term target of the geothermal studies is production of maps of northern Canada giving permafrost distribution and thickness in a fashion adequate for a physical understanding of the distribution, and adequate for evaluation of proposed resource development. This target includes knowledge of the distribution of terrestrial heat flow which is important in understanding the nature and composition of the lithosphere and the tectonic framework of northern Canada. Essential to such studies are the continued acquisition of field and laboratory data and the investigation of improved techniques for acquiring equilibrium subsurface temperatures in abandoned oil-wells, in diamond-drill holes during drilling halts, and in seismic shot-holes, which may be both on- and off-shore.

Geomagnetic Service of Canada

Responsibilities

The Geomagnetic Service is responsible for providing up-to-date and historical information on the direction, intensity and variation of the Earth's magnetic field over Canada and adjacent ocean areas. Such information is necessary for the construction of all types of navigational charts and for the identification of large scale magnetic anomalies which reveal changes in properties of the rocks in the earth's crust and have important applications in studies of crustal structure and mineralization. The magnetization acquired by rocks throughout their history is analysed in field and laboratory studies to learn when and how geological structures were formed. Knowledge of the evolutionary process is important in understanding how fossil fuel and economic mineral deposits were originally formed and where they might be located. The Service is also responsible for recording and analysing the more rapid variations of the geomagnetic field. Eleven magnetic observatories are operated for this

purpose, four of which are located in Arctic regions and three along the auroral zone. Studies of rapid magnetic variations are used to determine electrical current systems in the auroral electrojet and to provide insight into the dynamical behaviour and physical properties of the magnetosphere. Such studies also have practical applications in the North in the fields of telecommunications, the transmission of electrical power and the investigation of deep crustal structure by electromagnetic induction.

Review of 1975-76

In 1975 the on-going program to provide data for revision of magnetic charts included occupation of 25 repeat stations in western Canada, many of which were in the Northwest Territories. A new repeat station was established at Tyrell Lake, NWT. In addition two Arctic stations of historical significance were recovered as closely as possible. These were Fort Resolution, NWT (first occupied by Franklin in 1825 and Lefroy in 1844) and Fort Confidence, NWT (Richardson, 1848).

Magnetic observatories north of 60° were operated continuously through 1975-76 at Baker Lake, Cambridge Bay, Mould Bay and Resolute with auroral zone observatories at Churchill, Manitoba, Poste-de-la-Baleine, Quebec, and Yellowknife. Magnetic three-component recording stations were operated along a north-south profile of nine stations through Churchill from Winnipeg to Rankin Inlet in support of auroral and rocket research programs.

Geomagnetic depth sounding studies of the crust and lithosphere continued in 1975 with a profile of nine 3-component magnetometer recording stations operating in July from the Yukon-Alaska border across the Richardson Mountains and the Mackenzie Valley. To study induction effects in the deep ocean several weeks of data were obtained from a recording magnetometer at the AIDJEX base camp on the Beaufort Sea.

Rock samples for paleomagnetic studies were collected in the Precambrian of the Great Slave Supergroup (NWT); the sedimentary rocks and Precambrian volcanics of Cameron Bay (NWT); the Snake River formation (Yukon); the Silurian and Devonian red beds of Somerset Island (NWT); and in the Archean at Saglek Fjord (Labrador). The field work in both paleomagnetism and geomagnetic depth sounding was supported by the Polar Continental Shelf Project.

A detailed study of geomagnetic bays at Fort Churchill has led to the development of a model of the magnetosphere which provides a possible explanation for their characteristics and origin.

Plans for 1976-77

A 3-component aeromagnetic survey is planned to cover the eastern portion of Canada and adjacent ocean areas including northern Quebec, parts of Baffin Island, Davis Strait and the Labrador Sea. North-south lines will be flown about 30 nautical miles apart at an altitude of about 10,000 feet. A regional magnetic chart of western Canada, the Arctic Islands and adjacent areas showing large-scale anomalies in the vertical component with respect to the International Geomagnetic Reference Field is to be prepared for publication. Further paleomagnetic sampling is planned of the Devonian red beds of Somerset Island and of the Great Slave Supergroup. Investigations of electrical conductivity in the crust will be continued in the Arctic Archipelago with a profile of 10 temporary recording magnetometer stations across Banks and Victoria Islands in April. The north-south line of nine geomagnetic recording stations centred on Churchill, Manitoba will be operated in support of the International Magnetosphere Study (IMS) which commences in July 1976.

Long-term Plans

About 50 magnetic repeat stations are re-occupied in Arctic regions at five-year intervals in a continuing study of magnetic secular variation. The history of the formation of the Arctic Basin will be studied using paleomagnetic data from the Arctic Islands as well as magnetic anomalies revealed by airborne surveys, and further field investigations of the northern edge of the Precambrian Shield will be made by electromagnetic depth sounding experiments. Operation of the network of magnetic observatories will be continued and the automatic recording stations of the Churchill Line will be operated till the end of 1978 as a contribution to the IMS program in Canada.

Gravity Service of Canada

Responsibilities

The Gravity Service of the Gravity and Geodynamics Division has the responsibility of completing the regional gravity survey of the whole of Canada. In the North, this work is performed in co-operation with the Polar Continental Shelf Project of EMR. Precise observations of gravity provide basic data for the mineral and oil exploration industries, for studies of sedimentary basins and for studies of the earth's crust and upper mantle. In addition, these observations provide data for geodetic studies and supply a need of the Department of National Defence. The Service is responsible for maintaining gravity standards throughout Canada by establishing a first-order network of gravity stations to serve as a reference and as control points for all regional and detailed gravity surveys. Also the Service maintains a data bank of all gravity data which meet national standards.

Review of 1975-76

In March and April 1975 about 20,000 kilometres of shipborne gravity measurements were made in Hudson Bay. In addition, three short signature lines were measured at widely separated points in the Bay. This survey was a co-operation project with the Canadian Hydrographic Service, DOE.

A helicopter-borne survey was carried out on the ice cover of the Beaufort Sea west of Banks Island, also during March and April 1975. Over 500 new gravity stations were measured, but not all objectives were reached as the survey was terminated by an unusually early break-up of the sea ice.

A land-based helicopter survey of Victoria Island took place in June and July 1975. A total of 640 stations were measured to complete the regional gravity coverage in this area. Both this and the previous survey using helicopters were carried out with the co-operation of the Polar Continental Shelf Project. Some gravity control stations in the area were inspected in the course of this survey.

A contract survey for approximately 500 new gravity stations has been let for the area in the western half of Great Slave Lake. Field work was to begin in February 1976 and be completed by May 31, 1976.

Two papers were published in 1975 interpreting the prominent positive free-air gravity anomalies on the continental margins off the Mackenzie Delta and Banks Island. The anomalies were interpreted as being due to thick wedges of relatively young (Cenozoic) sediments acting as a load on the crust rather than as ridges of high density rocks of the underlying basement. A seismic refractive line off the Mackenzie Delta was planned in co-operation with the Polar Continental Shelf Project to check this interpretation, but was cancelled for environmental reasons.

One of the studies contributing to this decision was that of sea ice movements in the Beaufort Sea, 1973-1975, using Landsat remote sensing imagery. This showed that sea ice during March and April can move at rates of from 1.7 to 18 kilometres per day, making surface transportation impractical at that time of year.

Plans for 1976-77

Helicopter survey of remaining unsurveyed areas will be carried out on sea ice west of Banks Island and in a small area of Amundsen Gulf in March and April 1976. In the course of this survey a signature line for shipboard surveys will be measured at the westerly end of Lancaster Sound. This service will be in response to a request from the Atlantic Geoscience Centre.

Starting in March 1977 the regional gravity coverage of ice covered waters in the Arctic will be extended to Viscount M'Clure Sound and M'Clure Strait areas. At least two years of work is anticipated in this region.

During 1976 inspection and monumentation of gravity control network stations on Devon and southern Ellesmere Islands will effectively complete the network in the Arctic north of 74°N. A brief visit is also planned to the Haughton Dome impact structure on Devon Island, recognized in 1974, to collect further samples and evaluate the structure for a possible detailed gravity survey. Theoretical studies arising from the results of earlier investigations into the subsidence history of the Sverdrup Basin will be continued.

Long-term Plans

The Gravity Service plans to continue mapping the gravity field in the North at a standard interval of 15 km or less over the land and frozen sea surfaces of northern Canada. The first-order network of gravity stations will be maintained and extended as necessary. Interpretation of the gravity field and theoretical studies of the Sverdrup Basin and other sedimentary basins in the North will be continued.

Geodynamics Service of Canada

Responsibilities

The Geodynamics Service of the Gravity and Geodynamics Division has the responsibility of making precise observations of crustal deformation of earth tides throughout Canada. The work has included responsibility for measuring horizontal and vertical movements of the Arctic ocean and ice as part of the Arctic Ice Dynamics Joint Experiment (AIDJEX).

Review of 1975-76

Ocean tilt and ice tilt measurements in the Beaufort Sea were carried out at several times between March 1975 and March 1976. The program of measurements was curtailed by difficult ice conditions late in 1975. These studies form part of the Geodynamics Service contribution to the AIDJEX program and will lead to a better understanding of the interaction between atmosphere and hydrosphere in the Arctic Ocean basin.

Plans for 1976-77

The present program of AIDJEX studies will conclude in the spring of 1976 and will be followed by extended analysis of the field results. No further field work is planned for this year.

Long-term Plans

It is anticipated that further studies of ice and ocean tilt in the Arctic will be planned when the analysis of AIDJEX results is complete. Ground-based earth tide measurements will be superseded by satellite-based laser-ranging methods in the near future.

Canada Centre for Remote Sensing (CCRS)

Responsibilities

The Centre's activities include space-borne and airborne remote sensing with the objective of ensuring the availability of synoptic, wide coverage satellite imagery and digital information and of high-resolution, specific-coverage aircraft imagery and digital information for use in the development of management systems for maritime activities, forestry and agriculture industries, major engineering and environmental works, hydro-electric power generation and flood control, and cartography. In the area of research and development the centre aims to develop and prove remote sensing systems, methods and instruments, to demonstrate their practical application and to encourage their transfer to the aerospace, electronics, and geoscience industries for scientific and operational

use. The Centre also makes available and disseminates up-to-date technical information and provides a high level of expertise, practical advice and supporting facilities to remote sensing users in Canada.

In northern Canada, the accelerating search for new sources of energy and minerals, the vast relatively unpopulated expanse, the severe logistics problems and climatic conditions, and the scarcity of data on all aspects of the environment, focus attention on remote sensing techniques as a way of obtaining timely cost-effective and accurate information to supplement ground studies.

Review of 1975-76

Airborne Remote Sensing

During 1975-76, two airborne operations were carried out in the Yukon Territories. One mission flown in the Whitehorse area for Mr. Roger Clissold of Edmonton was to locate areas of heat anomalies at the land surface and thereby locate warm groundwater for municipal water supply. The principal sensors flown were a two channel line scanner and a PRT-5 radiometer, although colour and colour infra-red film were also flown.

The second mission flown in the Watson Lake area for R. Desroches of the Regional Department of Forestry in Whitehorse was to utilize remote sensing technology to inventory northern settlements and their impact on the surrounding vegetation and land forms. Colour and colour infra-red photography and thermal infra-red imagery were acquired. The project involved 988 sensor line miles.

Spaceborne Remote Sensing

Since April 9, 1974, CCRS has been receiving Landsat-II images of Canada and together with Landsat-I provides nine-day coverage of Canada. Data from the very high resolution radiometer on board NOAA-2 and NOAA-3 is also received.

All black and white Landsat imagery is now produced and distributed by Integrated Satellite Information Services (ISIS) at Prince Albert, Saskatchewan. The data is also processed and distributed in Quicklook format and as a Quicklook microfiche product called Ertsfiche. It is intended to move the production of the Computer Compatible Tapes to the reception sites at Prince Albert and Shoe Cove, Newfoundland as soon as it is practical.

The quicklook imagery has been used extensively in northern Canada for snow and ice studies. In the summer of 1975 satellite imagery was relayed in facsimile form via the Anik satellite to Resolute so that information on Arctic ice conditions could be received within about two to six hours of the satellite passage. The data was used particularly extensively in marine seismic surveys. It was also relayed by land line telephone to Ice Forecasting Central in Ottawa for incorporation in their ice charts. ISIS reports that in a three-month period in 1975, they delivered on request to Ice Forecasting Central and two seismic survey companies over 200 million square miles of operational data at a basic total cost (including communication charges) of about 0.002 cents per square mile.

Research and development of new remote sensing devices

New remote sensing devices with applicability to northern studies continued to be developed and tested during 1975-76.

The first Arctic sea ice mission of a CCRS aircraft was carried out in April 1974. The purpose was to overfly the AIDJEX site and the offshore area in the Canadian Beaufort Sea and collect scientific data using a scatterometer, a radio-meter, an infra-red line scanner, and photographic cameras. Research on the 13.36ghz scatterometer for the identification of the microwave scattering coefficients of various targets is continuing. In 1976 east coast sea ice studies are planned.

Development work and testing are continuing on a laser bathymeter. The York University four channel profiling photometer has been tested extensively over the Great Lakes and could be used in future northern water quality studies.

Development and demonstration of techniques for using remote sensing information systems

The Surveys and Mapping Branch have produced from Landsat imagery mosaics of northern Canada at scales of 1:2.5 million, 1:1 million, 1:5 million and 1:10 million.

The Image 100 used for analysis of Landsat digital data has been recently upgraded by a series of hardware and software modifications. Pattern recognition research has been and continues to be carried out in the areas of clustering, spatial filters and statistical estimation. The Centre's interpretation systems have been utilized in a number of demonstration projects including projects carried out in the North.

The Centre's Imagery Browse Facility as well as the Centre's automated remote sensing bibliography RESORS were utilized extensively by explorationists and researchers operating in the North.

Long-term Plans

The Centre will continue to develop methods of obtaining timely, cost-effective and accurate remote sensing data for northern areas and to promote the use of this data in operational systems. Remotely sensed data will provide an important input to ocean management systems, land use planning, environmental impact assessment, northern engineering projects, wildlife studies and northern resource development.

Mineral Development Sector

Responsibilities

The Mineral Development Sector is responsible for the development of federal policies for mineral resources. The emphasis is on resource use and contribution of minerals to the Canadian economy. Policy advice is based on systematic intelligence and analysis.

Review of 1975-76

Activities relating to the North carried out by the Mineral Development Sector were confined to policy advice, primarily to the Department of Indian Affairs and Northern Development and related

interdepartmental committees, concerning:

- Arvik lead-zinc development;
- Nanisivik mine development;
- Yukon Minerals Act, draft legislation;
- Yukon Indians settlement negotiations;
- Northern transportation issues; and
- Mineral deposit inventory and resource evaluation.

Plans for 1976-77

Activities will include a continuation of the above, plus advisory roles in the settlement negotiations and possibly the Northwest Territories Indian treaty negotiations.

Long-term Plans

None specific, beyond continuation of policy advisory role on current issues.

Resources allocated to Northern activities in the Mineral Development Sector

| 1975-76 | 1976-77 | 1977-78 |
|------------|------------|------------|
| MY (\$000) | MY (\$000) | MY (\$000) |
| 2.1 44.2 | 1.6 51.9 | 1.6 51.9 |

Resource Management and Conservation Branch

Responsibilities

The mineral resources underlying Hudson Bay and Hudson Strait, including islands south of the line of administrative competence defining the northern limit of EMR responsibility, are administered managed by the Resource Management and Conservation Branch. The Branch exercises comprehensive statutory authority and full regulatory control over the exploration for, and development of mineral resources in these as well as in other offshore areas under the jurisdiction of the Department.

The disposition of oil and gas exploration permits and production leases on Canada lands, both on land and offshore is governed by the *Canada Oil and Gas Land Regulations*, which were promulgated under the *Public Lands Act* and the *Territorial Lands Act*. Comprehensive statutory authority for controlling all oil and gas operations, including the conservation of resources, the prevention

aste and pollution and the safety of personnel, is provided for by the *Oil and Gas Production and Conservation Act*. The recording of mining claims and related non-hydrocarbon mineral exploration and development activities, both on and offshore, are governed by the *Canada Mining Regulations*.

Review of 1975–76

Oil and Gas

The only work conducted in the offshore Hudson Bay and Hudson Strait regions during the 1975 operating season was a survey for Mobil Oil Canada, Ltd. during which 1787 statute miles of reflection seismic was recorded. The work was undertaken in central areas of the Bay in August and September by the contractor, Geophysical Service Inc. using the Canadian flag vessel *m/v Carino*.

Proposals for exploratory programs in northern Hudson Bay were received but, due to their proximity to the islands where, they were not approved. A suspension of oil and gas exploration in this area was imposed in 1971 when the community of Coral Harbour on Southampton Island expressed concern regarding the adverse impact that such exploration might have on the marine mammals inhabiting these waters, as well as upon the preservation of their traditional way of life.

Demonstrations of the non-explosive low energy acoustic source that would be used and numerous public meetings were held to alleviate their concern but the situation remained unchanged during 1975. Rather than upset any of the understandings reached between the native peoples and the Department of Indian Affairs and Northern Development, EMR granted annual moratoriums on work requirements on permits in this area.

The total spent by industry in the search for oil and gas in the Hudson Bay and Hudson Strait regions now amounts to some \$34 million.

As of February 1976, there were 300 federal oil and gas permits covering 1,267,090 acres held in the Hudson Bay and Hudson Strait regions under the administration of the Department of Energy, Mines and Resources.

Other Minerals

There was no staking of claims or other reported activity by industry for minerals other than oil and gas. Recent amendments to the *Canada Mining Regulations* now require that, in order to better control the undertaking of prospecting and mining activities within the onland and offshore areas under the jurisdiction of the Department of Energy, Mines and Resources, the staking of mining claims will not be allowed without the prior written approval of the Minister except where such staking may be within 6,000 ft. of and contiguous to like activities on land under the jurisdiction of the Department of Indian Affairs and Northern Development.

There was one active onshore mining lease, for 78.2 acres, on an island in James Bay.

Plans for 1976–77

Industry's future oil and gas exploration activities in Hudson Bay, with the exception of the northern portion, will probably be influenced to a large extent by their interpretation of the geophysical and well data currently available.

Unless the situation in northern Hudson Bay changes, there will probably be no oil and gas exploration activities conducted in the Bay during 1976–77.

Both the *Canada Oil and Gas Land Regulations* and the *Canada Mining Regulations* are in the process of being extensively amended and revised Regulations should be promulgated within a year.

Certain near shore islands in James Bay, Hudson Bay and Ungava Bay, comprising about 150 square miles of the mineral rights administered by the Branch, were involved in the negotiations between the Governments of Canada and Quebec on the one hand, and the indigenous peoples of the region on the other, as part of the proposed James Bay Agreement. They were selected as Category I lands for exclusive native use. The final Agreement, when signed, will carry with it the right of the native community to control mineral exploration and development on these lands.

Long-term Plans

The Branch will continue to manage mineral resources in those areas of the Canadian North administered by the Department in a manner consistent with the public interest and with special emphasis on:

- safety of human life;
- preservation of the environment and prevention of pollution;
- concerns of native peoples;
- optimum physical and economic conservation of mineral resources;
- optimum return for Canada from these resources;
- co-ordination of offshore mineral resource activities with other uses of the offshore; and
- maintenance of exploration on a continuing and orderly basis.

Geological Survey of Canada

Responsibilities

The fundamental role of the Geological Survey of Canada is to provide a comprehensive inventory and understanding of the geological framework of the country interpreted in terms of all national activities that make use of or are affected by geology. The activities include not only determining the mineral and energy resource potential available to Canada but also carrying out land capability studies, studies on the geology of urban areas and studies designed to assist in conserving our natural environment.

The Geological Survey contributes to two programs of the Department of Energy, Mines and Resources – the Earth Sciences Service Program and the Mineral and Energy Resources Program.

The first program is concerned with obtaining information about the geological framework of Canada, its properties, evolution and development. Information on bedrock geology is obtained through systematic surveys, regional studies and national compilations and is used for identifying resources and for making appraisals of non-renewable resources. Similar studies are carried out to obtain information about the nature and evolution of the Canadian landscape, its surficial materials, terrain properties, processes, hazards and capability for use. Such

information is essential when evaluating the effects of energy and mineral resource development.

The second program is concerned with resource identification and resource estimation. Attention is given to identifying areas likely to contain mineral and fossil fuel resources. Estimates of the amount and quality of energy resources are made each year but those for mineral commodities, because of the complex calculations involved, are made less frequently.

Review of 1975-76

The principal priority of the Geological Survey continued to be the on-going improvement of the description and understanding of the geology of Canada. Emphasis continued to be given to the area north of 60° where the present level of information is low, the need for regional information for resource exploration and for the assessment of the impact of exploitation is high, and where other government agencies are not in a position to undertake effective regional investigations. Emphasis continued to be placed on bedrock surveys and related studies in the Mackenzie Arc to parts of the Arctic Islands and to the Precambrian Shield. Terrain studies in recent years were concentrated in the Mackenzie Valley in response to demands for information for a proposed transportation corridor but the emphasis has now shifted to the line of a proposed pipeline from the Arctic Islands southward along the west side of Hudson Bay. Such a route would cross the inter-island channels north of Parry Channel and studies are also in progress of bottom and coastal conditions in these ice-infested channels.

Most preliminary results of the 1975 activities in the North were released in two volumes of the Geological Survey's Reports of Activities series; i.e., in November 1975 (Paper 75-1C) and in January 1976 (Paper 76-1A).

Because of changing needs and concepts much of the older reconnaissance mapping is being upgraded to 1:250,000 scale in studies in the Precambrian Shield. Investigations south of the Baker Lake area updated the Aphebian and Archean geology south of the Dubawnt Group and also assessed the mineral potential of pre-Dubawnt and Dubawnt

Group rocks. During the 1975 field season, studies in the Foxe Fold Belt, Baffin Island, and the Great Bear Lake area, District of Mackenzie continued. In the latter location, present studies and previous research of a differentiated monzonite-syenodiorite-syenite and related igneous complexes have shown that the silver-uranium-arsenide vein mineralization of the region may be controlled by these complexes which may prove to be targets for exploration in the future. Detailed mapping (1:25,000) south of Coronation Gulf was started to study the large Archean felsic Black River volcanic complex in order to determine its relationship to surrounding rocks, any mineral occurrences of possible economic interest, criteria for identification and interpretation of ancient metamorphosed felsic volcanoes in the Slave Province, and the mode and environment of volcanic eruption.

Mapping and stratigraphic studies of Goulburn sediments in the Bathurst Inlet area have led to the discovery of cross-cutting pipes and dykes of lithic breccia that are similar to the 'exotic' breccias in the East Arm of Great Slave Lake where there is known uranium mineralization. Two other areas of economic interest were noted during these studies, both occurring in the lower part of the Goulburn Group: Disseminated chalcocite in a stromatolite zone and associated sedimentary sequence; and unidentified radioactive minerals disseminated in mudstones and siltstone. Only through investigations such as these will the geological evolution of the Shield be understood and thereby the origin and distribution of the contained mineral deposits.

Studies to establish a coherent stratigraphic framework that reflects the depositional history of the Arctic Islands were carried out in northern Ellesmere Island and on Somerset Island. These aid companies in exploration and development of remote areas by providing information related to the occurrence of minerals, hydrocarbons, and coal.

During the summer of 1975, a party working on Proterozoic rocks of the Mackenzie Mountains encountered a significant copper showing. This discovery, announced to the public August 26, 1975 through an Open File release, led to considerable activity. A report in Paper

76-1A (p. 117) presented the general geological setting of the Redstone River area; information that was not available for publication when the Open File was released.

The Uranium Reconnaissance Program has been designed to provide high-quality systematic reconnaissance data relative to the distribution of uranium in Canada to serve as a guide and incentive in exploration for new deposits and to provide a basis for the national uranium resource appraisal. The Geological Survey is undertaking preliminary reconnaissance and feasibility studies as required but the principal operations are being done under contract and entail airborne radiometric activity and ground geochemical surveys. The geochemical survey in southwestern Baffin Island (Paper 75-1C p. 239-241) is part of the Survey's program of developing new methods for the exploration of uranium and base metals.

Although mapping of Quaternary geology continued in many parts of the North, most work was concentrated in the Arctic Islands.

The Arctic Islands were given priority in order to provide surficial geology and terrain sensitivity information to aid in the administration of the Territorial Land Use Regulations and to provide data for the assessment of the environmental impact on areas that might be affected by pipeline construction. This included the description, mapping and explanation of unconsolidated deposits, landforms and organic cover on Bathurst, Cornwall, Somerset, Prince of Wales and adjacent islands as well as permafrost studies, measuring the ice content of sands and silts and the occurrences of massive ground ice.

Coastal processes on Banks Island were studied to provide information pertinent to pipeline crossings of inter-island channels. SCUBA diving was employed as a means of obtaining information about the sea floor by direct observation rather than by the more conventional methods of remote sensing and widely spaced bottom sampling. These methods were used to study iceberg gouging on the sea floor to determine the maximum water depth in which they occur and how deep the gouges are because any pipeline in the Arctic must

oid being ruptured by icebergs whether on or below the sea floor.

Fluvial and mass wasting processes they may affect the river crossings were studied on Banks Island. The hydraulic characteristics and hydrologic regime of major rivers and tributaries in the Arctic are investigated with particular reference to channel stability, changes in sediment storage, sediment transport, the effects of mass movement on sediment supply and the influence of permafrost and river ice.

During this past year, the Geological Survey of Canada published Paper 74-30, Volume 2, the first major account in understanding the complex geology of the continental margin of eastern Canada including parts of Baffin Bay and other northern areas. These studies have provided strong evidence that Baffin Bay was formed by the spreading apart of two tectonic plates (Greenland and East-Canada) according to the theory of plate tectonics.

Plans for 1976-77

Of the 466 projects being carried out by the Geological Survey of Canada in 1976-77, about 175 will involve work north of 60° and 46 of these have a field component in 1976-77.

There are a number of Precambrian geologic studies which will upgrade former reconnaissance mapping to modern 1:50,000 standards. These will provide a basis for interpretation and synthesis of the geology and for an assessment of the mineral potential of mapped areas. In this regard, field work on the Archaean gneissediments and metavolcanics and the Proterozoic and Archaean granitoid rocks of the Tulemalu Lake (65J) and McQuoid Lake - Thirty Mile Lake (65P) map areas, and their relationship to uranium mineralization, will be completed in 1976. Field work will be started in the Amer Lake map area (66H) and a detailed 1:50,000 mapping project of the anorthosite and gabbroic rocks northeast of Baker Lake (67D/I) will commence. Precambrian geologic studies and mapping will continue in 1976 in the Hackett River-Back River Area (76F, 76G) and further field work will be carried out in the study of the Archaean felsic volcanic complex near Repulse Lake (parts of 76B, C, F and G). The first summer of a two-season 1:50,000

mapping program of the Keskarrh Bay map area (86H) will be carried out in 1976. The necessary additional field work for a reactivated stratigraphic and basin analysis of the Great Slave Supergroup and the Et Then Group of the East Arm of Great Slave Lake (75E, L, K; 85H, I) will be carried out in 1976 and the results incorporated in the final 1:50,000 maps. Mapping of the Penrhyn Group metamorphic complex of the Melville Peninsula (46O, P) will be resumed also.

Field operations for Operation Boothia, in 1976 in the southern half of Somerset Island and the northern portion of the Boothia Peninsula (57B, C, F; 58C, D) will continue, with the aim of providing a better understanding of the stratigraphy and structure to aid in resource evaluation and to provide background knowledge for possible pipeline construction. Field studies on the Paleozoic rocks of Cornwallis and adjacent smaller islands will continue. Further field studies of the bedrock geology and stratigraphy of the western Queen Elizabeth Islands (Mackenzie King, Borden and Brock Islands) will begin.

A field party near Aklavik will carry out work on the Blow River area as part of detailed stratigraphic studies required for assessment of hydrocarbon potential of the Mackenzie Delta area. Farther south, further field work will be undertaken in Operation Norman in the Margaret Lake area (106B) in conjunction with a party working on the detailed stratigraphy of the Helikian and Hadrynian rocks of the Upper Ramparts River, Bonnet Plume Lake, and Mount Eduni map areas (106A, B, G). Another party will be conducting similar work in the Virginia Falls map area of the Southern Mackenzie Mountains (95). Still another party will carry out structural studies in this area. The Margaret Lake campsite will also be used by a party studying the Devonian biostratigraphy within a 90-mile radius of the campsite (106B). The sedimentology of the Rapitan Group will be studied in the Glacier Lake-Wrigley Lake map area (95D, E). Field work for a study of the Mesozoic biostratigraphy of the Northern Richardson Mountains (106M, 107B, 116P, 117A), will be undertaken.

In the southern Yukon, field work will be carried out for continuing studies of the stratigraphy, structure and metallogeny of the Selwyn and Pelly Mountains (105F, G; 106C, D, F) to provide an understanding of the distribution of the lead and zinc deposits of the region currently undergoing vigorous exploration.

The Geological Survey of Canada has work in progress on the identification of favourable environments for mineral resources as a basis for the determination of Canada's mineral endowment. Individual projects concern a single metal, or group of metals within the country and are seldom restricted to a geographic area.

Airborne gamma-ray spectrometer surveys will be flown at 5-kilometer spacing over parts of southern Keewatin (55, 65); the exact areas (dependent on the results of the 1975 survey) are not available at the time of writing. Preliminary geochemical surveys for uranium will be carried out under contract as part of the National Geochemical Reconnaissance (under the Uranium Reconnaissance Program) in the Wernecke Mountains (106) and in southern Keewatin (65A, B, C, P, M) by means of lake sediment and water sampling. Orientation uranium surveys, a follow-up to last year's lake sediment reconnaissance, will take place in the Nonacho Belt (75 F, K) to determine the optimum type of geochemical survey including collection, preparation and analysis of samples. Drift sampling for a project investigating uranium drift prospecting techniques in the lower Kazan River area will be carried out in the McQuoid Lake, Ferguson Lake, Tebesguak Lake, and Thirty Mile Lake map areas (55M; 65I, O, P).

Contract aeromagnetic surveys will be flown in the Melville Peninsula (46D, E, L, M) and the Coppermine area (86M, O, P).

Rocks will be collected from the Pine Point area for measurement of their electrical properties in connection with studies for onsite differentiation of sulphide minerals.

A radar sounding system, intended to aid in determination of the engineering properties of rocks, will be tested at Norman Wells (96E), Dawson (116B) and Rae Point (79B). Seismic properties of permafrost will also be measured. Observations of the latter will also be made at Barrow Strait (58F), Byam Channel (78H) and at various onshore and offshore sites near Tuktoyaktuk to further evaluate seismic techniques in order to map offshore permafrost. Shallow permafrost drilling and sampling in support of terrain inventory mapping will take place in the Baker Lake, Schultz Lake, Woodburn Lake and Amer Lake map areas (56D, E; 66A, H).

The variety of terrain studies undertaken by the Geological Survey of Canada reflect a continuing concern for the natural environment. There is a program of standard geological mapping of surficial deposits and landforms as a basis for subsequent classification and assessment of terrain sensitivity and capability for use and development, particularly on routes of proposed pipelines.

Systematic surficial geological mapping within central Keewatin (56D, E, K-N; 66A, H) will complete terrain mapping north of 60° for the major part of a potential gas pipeline route from the central Arctic Islands to southern markets. These field operations, together with office work on projects for which field work is already completed, are expected to provide complete coverage of terrain mapping between Latitudes 59° to 77° N, and Longitudes 91° and approximately 102° W by the end of 1976-77.

Terrain mapping in Keewatin is to be accompanied by geological evaluation of terrain materials and processes. In 1976, this will be carried out in central northern Somerset Island (58C). This will be enhanced by the use of portable drilling and coring equipment developed by the Geological Survey. Terrain inventory mapping of King Christian and Ellef Ringnes Islands will commence in 1976 (59,69).

The coincidence of a potential gas pipeline route with mineralized regions in central Keewatin enhances the significance of combined terrain mapping (57D, 65P, 66A) with the drift prospecting studies in the Maguse River and Amer Lake regions mentioned above.

Studies of coastal processes in the areas of the Arctic Islands (Somerset, Melville) and intervening channels (Barrow Strait, Lancaster Sound, Byam and Austin Channels) (48, 58, 68) are being continued and will form part of the planned program for CSS Hudson. Data from studies in conjunction with information acquired from previous work will form the basis of a new project designed to provide a geological zonation of the central Arctic coasts.

In the western Arctic, field work on geomorphic processes along the Beaufort Sea coast (107C, 117D) will be completed. Results of previous work here have been presented as testimony to the Mackenzie Valley Pipeline Inquiry and used by the Department of Indian Affairs and Northern Development in assessment of applications for land use permits by major petroleum companies.

In the Yukon Territory, work will continue on the Quaternary stratigraphy and paleontology of the Old Crow Basin (116D, 117A) and adjacent areas. This is expected to provide stratigraphic, geochronological and paleoenvironmental information on one of the most complete stratigraphic records of the Quaternary.

Long-term Plans

In general the long-term plans of the Geological Survey north of 60° are similar to the total objectives of the Branch – to make available to the government, other agencies and individuals, the earth science data needed to facilitate the national use of the non-renewable resources available to Canada and to provide information on all aspects of the terrain with special reference to terrain use and hazards. Because of the greater federal responsibility north of 60°, a large proportion of the Geological Survey's effort is directed to this area.

The Uranium Reconnaissance Program has been designed to provide high-quality systematic reconnaissance data relating to the distribution of uranium in Canada to serve as a guide and incentive in exploration for new deposits and to provide a basis for national uranium resource appraisal. The principal operations are cost-shared, contracted airborne radio-

metric and lake- and stream-sediment geochemical surveys. The Geological Survey is undertaking preliminary orientation and feasibility studies as required, well as on-going R&D activities related to methods of uranium exploration. Initial work in this 10-year program will be carried out north of 60°, at first radiating outward from areas of existing coverage in the Districts of Keewatin and Mackenzie. Some work will also begin in 1979 in the mountainous milieu of the Yukon Territory and this will build up in parallel with work elsewhere on the mainland north of 60°. A preliminary reconnaissance of the Arctic Islands, where surveys are very expensive, will commence in 1979. One-half of the federal portion of URP funding is to be spent north of 60°.

Efforts to improve the accuracy of estimation of the resources of oil and natural gas north of 60° will continue. Plans also call for the development of a greater understanding of the North's mineral potential. Emphasis will be placed on increasing the quality of information from regional bedrock studies, thereby enhancing the quality of mineral resource estimation.

Earth science data on Canada's North is increasing rapidly; and plans call for the development of more sophisticated methods of data manipulation.

The National Bedrock Geological Reconnaissance should be completed by 1979 to a minimum scale of 1:500,000 and more detailed mapping (1:250,000 scale) to present standards of those parts of the Precambrian Shield north of 60° should be 75 per cent complete by the end of the century.

A 1:1,000,000 compilation series of surficial geology maps should be complete for the Mackenzie Valley by 1980 and for the Arctic Islands by 1990.

Aeromagnetic coverage at a scale of 1:50,000 (or equivalent) for mainland Precambrian Shield and Platform areas should be completed by 1980 and long-term plans call for an extension of this mapping to the Arctic Islands and Yukon.

In the next five years, bedrock studies on a scale of 1:250,000 will be continued at the eastern and western ends of the Lyrdrup Basin, on Ellesmere Island and those parts of Boothia Peninsula and adjacent islands underlain by post-Cambrian rocks. More detailed mapping of the late Precambrian sedimentary rocks of northern Baffin Island will be undertaken. Regional analysis studies will be carried out in order to provide analyses of specific areas by interpretation, correlation and interpretation of geoscience data thereby enabling an assessment of their economic and engineering aspects. A synthesis of the Quaternary geology of the Arctic Islands will be undertaken, studies in Quaternary geochronology will be made in the Northern Basin Analysis Program will be extended.

Experience has shown that many of today's experimental procedures will become standard operating techniques in the near future. Development of geological technology having particular application to the North will be continued including further research into the use of direct prospecting techniques and the feasibility of geochemical surveys in the Arctic Islands.

During the next five years, petroleum and coal resource evaluation studies will be further extended in the Arctic Islands.

Reports relating to the Northwest Territories and Yukon Territory published by the Geological Survey of Canada 1975-1976

Memoirs

77- Geology of Kognak River area, District of Keewatin, Northwest Territories, by K. E. Eade.

Bulletins

- 235 Contributions to Canadian paleontology, by A. J. Boucot, J. G. Johnson, Rolf Ludvigsen and D. G. Perry.
- 237 Carboniferous ammonoids and stratigraphy in the Canadian Arctic Archipelago, by W. W. Nassichuk.
- 243 The Jurassic faunas of the Canadian Arctic - Lower Jurassic ammonites, biostratigraphy and correlations, by Hans Frobeld.
- 246 Sedimentology of the Archean Yellowknife Supergroup at Yellowknife, District of Mackenzie, by John Henderson.
- 249 Upper Cretaceous stratigraphy, Yukon Coastal Plain and northwestern Mackenzie Delta, by F. G. Young.
- 251 Investigations of Lower Paleozoic geology, Foxe Basin, northeastern Melville Peninsula, and parts of northwestern and central Baffin Island, by H. P. Trettin, 1975. Maps 1406A, 1407A.
- 252 Miospores and microplankton from Aptian-Albian rocks along Horton River, District of Mackenzie, by W. W. Brideaux and D. J. McIntyre.

Papers

- 73-79 The Epworth Group Rocknest Lake area, District of Mackenzie, by J. A. Fraser. Map 1384A.
- 74-13 Carcajou Canyon map-area, District of Mackenzie, Northwest Territories, by J. D. Aitken and D. G. Cook. Map 1390A.
- 74-16 Jurassic and Lower Cretaceous paleogeography and depositional tectonics of Porcupine Plateau, adjacent areas of northern Yukon and those of Mackenzie District, by J. A. Jeletzky.
- 74-17 Ontaratue River, Travailant Lake, and Canot Lake map-areas, District of Mackenzie, Northwest Territories, by D. G. Cook and J. D. Aitken.
- 74-21 Reconnaissance geology of a part of the Precambrian Shield, northern Quebec and Northwest Territories, by F. C. Taylor.
- 74-29 Bylot Island map-area, District of Franklin, by G. D. Jackson and A. Davidson; Map 1397A.
- 74-34 Lower Paleozoic Franklin Mountain and Mount Kindle Formations, District of Mackenzie, by B. S. Norford and R. W. Macqueen.

74-36 Franklin Bay and Malloch Hill map-areas, District of Mackenzie, by C. J. Yorath, H. R. Balkwill and R. W. Klassen; Map 1403A.

74-40 Geology of the Lower Paleozoic formations in the subsurface of the Fort Simpson area, District of Mackenzie, N.W.T., by N. C. Meijer-Drees.

74-53 Surficial geology of Tuktoyaktuk, District of Mackenzie, by V. N. Rampton and M. Bouchard; Map 5-1974.

75-1B Report of Activities; Pt. B; contains 65 short reports of which 35 are concerned with the North.

75-1C Report of Activities; Pt. C; contains 60 short reports of which 21 are concerned with the North.

75-18 Under-ice scuba techniques for marine geological studies, by Patrick McLaren and David Frobeld.

75-29 Experimental hydrogeochemical surveys of the High Lake and Hackett River areas, Northwest Territories, by E. M. Cameron and S. B. Ballantyne.

76-1A Report of Activities; Pt. A; contains 110 short reports of which 51 are concerned with the North.

Maps

- 1370A Geology, Great Slave, District of Mackenzie, compiled by R. J. W. Douglas and A. W. Norris. Lat. 60°00' to 62°00'; Long. 112°00' to 116°00'. Scale 1:500,000. NTS 85 SE.
- 1371A Geology, Trout River, District of Mackenzie, compiled by R. J. W. Douglas. Lat. 60° to 62°; Long. 116° to 122°. Scale 1:500,000. NTS 85 SW and 95 SE.
- 1372A Geology, Horn River, District of Mackenzie, compiled by R. J. W. Douglas, A. W. Norris and D. K. Norris. Lat. 62° to 64°; Long. 113° to 122°. Scale 1:500,000. NTS 85 NW and 95 NE.
- 1374A Geology, Dahadinini River, District of Mackenzie, compiled by R. J. W. Douglas. Lat. 63°00' to 64°00'; Long. 124°00' to 126°00'. Scale 1:250,000. NTS 95 N.

Open Files

- 255 Unedited, detailed report on the stratigraphy and sedimentology of the Paleozoic formations of the part of Devon Island in the vicinity of Prince Alfred Bay, N.W.T. by D. W. Morrow and J. Wm. Kerr.
- 260 A report dealing mainly with the sub-surface Proterozoic and Paleozoic stratigraphy of Banks Island, Arctic Canada, N.W.T. by Andrew D. Miall.
- 265 Surficial materials and biophysical regions, eastern Queen Elizabeth Islands, Part I. Preliminary drafts of maps and explanatory legends for Baumann Fiord (NTS 49 C) and Graham Island (NTS 59 D) map-areas.
- 272 Geology of Upper Ramparts River (106 G) and Sans Sault Rapids (106 H) map-areas, District of Mackenzie, N.W.T. by J. D. Aitken and D. G. Cook.
- 275 Seismic and electrical surveys, Martin Lake and Willowlake areas, Mackenzie Highway.
- 278 Bedrock geological map of Cornwall Island, District of Mackenzie; 1:62,500; by H. R. Balkwill, K. J. Roy, W. S. Hopkins, Jr., W. V. Sliter and D. G. Wilson.
- 279 Geological maps of parts of Yukon and Northwest Territories. Unedited geological synthesis of those parts of Yukon and Northwest Territories covered by map-areas Hart River (116 H), Wind River (106 E) and Snake River (106 F) with a composite legend, compiled by D. K. Norris, scale 1:250,000.
- 285 Surficial geology and geomorphology, Boothia Peninsula and Simpson Peninsula, N.W.T. Preliminary drafts showing the distribution of materials and landforms with an explanatory legend that includes data on materials, morphology, drainage, permafrost features and comments on the distribution of materials. Prepared by A. N. Boydell, K. A. Drabinsky and J. A. Netterville; scale 1:125,000.
- 289 Mineral deposit – land use map, Whitehorse, Yukon Territory (NTS 105 D). Map and accompanying notes provide an appraisal of mineral potential to be used as an aid in evaluation and overall land use studies; scale 1:250,000.
- 294 Surficial geology – District of Mackenzie, N.W.T. Preliminary unedited drafts of three surficial geology maps by P. T. Hanley, S. C. Chatwin, O. L. Hughes and J. Pilon; scale 1:125,000. The maps are: Norman Wells (96 E); Mahony Lake (96 F) and Canot Lake (106 P).
- 297 Paleontological reports with biostratigraphic zonation on seven wells drilled in Arctic Canada.
- 302 Geological map of parts of Northwest Territories. Unedited geological synthesis compiled by D. K. Norris of those parts of Northwest Territories covered by Mackenzie Delta (107 C) and Aklavik (107 B) with a composite legend; scale 1:250,000.
- 303 Geological maps of Northwest Territories and Yukon Territory. Unedited geological synthesis of those parts of the Northwest Territories and Yukon Territory covered by Martin House (NTS 106 K); Trail River (NTS 106 I); Fort McPherson (NTS 106 M) and Arctic Red River (NTS 106 N) map-areas, with a composite legend compiled by D. K. Norris; scale 1:250,000.
- 304 Geology of Norman Wells and Mahony Lake map-areas, District of Mackenzie, N.W.T. Unedited geological maps with legends of part of the Northwest Territories covered by Norman Wells (NTS 96 E) and Mahony Lake (NTS 96 F) map-areas; scale 1:250,000.
- 307 Geological maps of Penrhyn Group, Melville Peninsula, N.W.T. A series of fourteen 1:50,000 scale field maps of Penrhyn Group metasediments and associated basement gneiss at the southwest limit of Fox Fold Belt, Melville Peninsula, N.W.T. covering parts of NTS 46 K, N, O, by J. R. Henderson, J. E. Reesor, A. N. LeCehminant, I. Hutcheon and A. Miller.
- 332 Geological maps of the Kilohigok Basin, Bathurst Inlet to Rockinghorse Lake by F. H. A. Campbell and M. P. Cecile. Unedited geological maps, Kilohigok Basin, Bathurst Inlet to Rockinghorse Lake, District of Mackenzie; scale 1:250,000; parts of 75 E, G, J, K, L, N, O; 77 A, B; 86 H, I.
- 333 Lower Cambrian stratigraphy, Mackenzie Mountains, Northwestern Canada by W. H. Fritz.

Polar Continental Shelf Project (PCSP)

Responsibilities

To do a long-term study of the continental shelf lying north of the mainland of Canada and north and west of the Canadian Arctic Archipelago, including the sea floor, the earth's crust, the mantle beneath it, and the waters above it; together with the islands of the archipelago, the straits and sounds between the islands and, where relevant, the adjacent mainland.

The study covers mainly those fields of survey and research for which the Department of Energy, Mines and Resources is responsible in other parts of Canada wherever such a study is not more economically and efficiently pursued as a separate self-contained operation. It is also designed to include or to support a considerable extent worthwhile research in fields outside those normally covered by the Department if such research is in the national interest and could not otherwise be done.

An important function of the PCSP is co-ordinate and arrange for mutual or concerted action by various agencies, whose diverse specialties or capabilities can be brought to bear on different but related aspects of a major Arctic problem or critical area of study; and to provide continuity of planning and operation for various studies which are short-term and focused on individual problems.

Emphasis is placed on field research and survey, but basic laboratory or theoretical research is carried out as needed to aid in the investigations, or in the interpretation of field data; and equipment or technique development or experimentation is undertaken when relevant. In addition, the field activities of the project are made available, under certain conditions, to approved university and other non-government research groups.

Review of 1975–76

Field work was carried out from mid-February to mid-October, being co-ordinated from Tuktoyaktuk in the Mackenzie Delta and from Resolute on Cornwallis Island.

1975 was the busiest, most productive and one of the most satisfying years in the history of PCSP. The second year of the Beaufort Sea Program with its 32 different projects kept staff and facilities at Tuktoyaktuk fully occupied. The co-ordination of the logistics for the Eastern Arctic Island Pipeline Program was conducted by PCSP staff out of Resolute. The major hydrographic program was executed successfully in the Nares Strait and Kane Basin while the gravity program west of Banks Island was curtailed due to an unusual amount of open water. The gravity program to complete the coverage of Victoria Island in the summer was entirely satisfactory. Geological and biological studies were supported to a greater extent compared with past years due primarily to the environmental-social programs in both the eastern and western Arctic. The Northwater Project was supported generously. The Arctic Ice Dynamics Joint Experiment, AIDJEX, was launched in March 1975 and will extend through to May 1976, with 11 Canadian projects being undertaken to make use of the available facilities. The AIDJEX program received the largest portion of PCSP support in 1975, a contribution toward the acquisition of knowledge about the Arctic that will in future be of considerable benefit to Canada. A total of 127 projects in the Arctic shared in PCSP support during the 1975 field season.

In addition to the Department of Energy, Mines and Resources, the following agencies were involved in, or received assistance from, the 1975 program of the Polar Continental Shelf Project: Arctic Institute of North America; Agriculture Canada, Biosystematics Research Institute; Reference Research Establishment Pacific; Department of Indian and Northern Affairs; Environment Canada, Arctic Biological Station; Environment Canada, Canadian Hydrographic Service;

Environment Canada, Canadian Wildlife Service; Environment Canada, Frozen Sea Research Group; Environment Canada, Inland Waters Directorate; National Museums of Canada; Quebec Biological Research Service; Carnegie Museum of Natural History; Milwaukee Public Museum; Swiss Federal Institute of Technology; Carleton University, Ontario; McMaster University, Ontario; Tubingen University, West Germany; University of Alaska, Alaska; University of Alberta; University of British Columbia; University of Massachusetts, USA; University of Ottawa, Ontario; University of Toronto, Ontario; University of Washington, USA; University of Western Ontario.

The following is a summary of work conducted during 1975 by the Polar Continental Shelf Project or to which the Project contributed substantial support. In several cases, as noted, the Project provided logistic or field support to studies of other agencies; these studies will be described in detail in those reports submitted by the various agencies responsible for their scientific direction.

Archaeology: Banks Island

Investigator: H. Muller-Beck, Tubingen University

Further field work was undertaken in the region of the Umingmak site and the Lower Thomsen River. The Umingmak site was evidently inhabited 3600 to 3300 years ago (three C-14 dates); several implements and animal bones were found at this relatively large site. Chert tools, knives and bone instruments and many wooden objects indicate an Arctic Hunter Culture of pre-Dorset time. The Lower Thomsen River sites are all of Copper Eskimo time. The remains of many muskoxen attest to the type of food supply of that time. These later sites were used in the spring and summer and possibly as recently as 1880. In all sites, glass, painted wood, iron and even parts of locks have been found, assumed to have belonged to the *H.M.S. Investigator* abandoned in

Mercy Bay in 1853 by McClure during the search for Franklin. This is probably the reason that the Copper Eskimos ventured so far north of their traditional hunting grounds.

Biology: Vertebrate Ethology and Animal Community Study, Bathurst Island
Investigator: S. D. MacDonald, National Museum of Natural Sciences (NMNS)
The NMNS High Arctic Research Station was established on Bathurst Island in 1968 in collaboration with the Polar Continental Shelf Project. The detailed, long-term studies are designed to investigate the relationships between species of arctic animals and the behavioural adaptations that enable them to survive in high arctic environments. The continuing studies include breeding bird census and banding program, life history and ecology of varying lemming, meteorology and microclimatology, behaviour and ecology of muskoxen and behaviour and ecology of the ivory gull. New projects undertaken in 1975 include behaviour of Peary caribou and arctic fox, soil lichen ecology, breeding biology of the red-throated loon and vegetation mapping, plant community studies and bird nesting habitat. More complete details of these projects are noted in this same publication in the submission by the National Museum of Natural Sciences.

Biology: Insects and Vascular Plants, Victoria Island

Investigator: D. M. Wood, Biosystematics Research Institute, Agriculture Canada
A preliminary evaluation of several groups of insects in north-central Victoria Island has revealed a very diverse fauna in spite of the high latitude, including a few species well north of their previously known range. The presence of 12 species of butterflies, as compared to seven in the Queen Elizabeth Islands; five species of black flies, (none in the high arctic); and several similar comparisons, suggest a fauna nearly twice that of Lake Hazen, one of the most favourable areas and certainly the most thoroughly studied in the high Arctic. The vascular flora as a whole, which numbered about 110 species, although noticeably deficient in acidophilic species, was characteristic of Young's Zone 3.

Biology: Ornithology, northern seabirds, Prince Leopold Island

Investigator: D. N. Nettleship, Environment Canada, Canadian Wildlife Service
The major project from May to September, 1975 was an investigation of the status (breeding population size); use of habitat (distribution); phenology of breeding; breeding performance and food preference of five species of seabirds: the Northern Fulmar *Fulmarus glacialis*, Glaucous Gull *Larus hyperboreus*, Black-legged Kittiwake *Rissa tridactyla*, Thick-billed Murre *Uria lomvia* and Black Guillemot *Cephus grylle* on the cliffs and adjacent waters of Prince Leopold Island (74° 02' N, 90° 00' W). The data will provide a baseline and simulation model from which estimates and predictions of population density flux, biomass changes and bioenergetic demands of resident breeding species populations, can be made, especially with reference to the breeding season. This work was financed principally by the Canadian Wildlife Service (Eastern Region) with additional support from the Polar Continental Shelf Project and the Environmental-Social Program, Northern Pipelines, DIAND.

Biology: Ornithology, Brant Geese, Melville Island

Investigator: L. Prevett, Environment Canada, Canadian Wildlife Service
Brant geese have been legbanded in the Queen Elizabeth Islands on five different islands during 1973-74-75 and neck-collared in 1974-75. Since putting on the neck collars, some Arctic Island Brant have been found in Ireland, Washington State, Russia, Mexico, Iceland and France but none have been observed along the Atlantic coast. The banding process has been supported logistically by PCSP.

Biology: Ornithology, Greater Snow Geese, Eastern Arctic

Investigator: J. H. Heyland, Quebec Biological Research Service
The interpretation of satellite imagery is a timely and less costly method of assessing snow conditions on the nesting grounds of the greater snow geese. Hunting limits, set in early July, are dependent upon accurate predictions of the success of reproduction of any species and since nesting is dependent on snow cover, satellite imagery interpretation may be a means of setting these hunting limits, although much more ground truth and correlations are required. During 1975, 238 breeding adult snow geese were neckcollared in four eastern Arctic areas. Some of these were observed along the St. Lawrence River and further south during the fall of 1975. PCSP provided logistical support for this program.

Biology: Ornithology, Shorebirds, Eastern Arctic

Investigator: R. I. G. Morrison, Environment Canada, Canadian Wildlife Service
Banding studies on high Arctic populations of Knot and Turnstone were continued and studies of habitat and breeding density were started. Several birds banded in Europe were trapped in the Canadian Arctic and vice-versa. Ornithological surveys were carried out around Alert to update information recorded in 1950. PCSP provided complete logistic support.

Biology: Zoology, Peary Caribou, Eastern Arctic

Investigator: D. C. Thomas, Environment Canada, Canadian Wildlife Service
To follow up the 1974 study of the disastrous winter conditions that depleted the caribou herds on some Arctic Islands, 39 caribou were collected from several locations in March, 1975 in a study of the interrelationships between environmental conditions, reproduction and diet. Preliminary results revealed that the caribou on Prince of Wales, Somerset and Russell Islands were young, in good or excellent condition and highly productive. Those samples from Melville, Eglinton and Prince Patrick Islands were old, in fair to poor condition and unproductive. PCSP provided aircraft support.

Biology: Zoology, Narwhals, Prince Regent Inlet

Investigator: K. Hay, Environment Canada, Arctic Biological Station
The purpose of this research is to determine population sizes, migration routes, dynamics and general biology of this relatively unknown species. Surveys conducted by helicopter in June were inadequate in obtaining population data. Two field teams sampled 65 narwhals (35 females and 30 males) from the Inuit hut near Arctic Bay and Pond Inlet in late July and August. Material collected, including teeth and bones for ageing, and ovaries and testes for reproductive studies, will enable determination of the life history parameters and population dynamics of this species.

Biology: Zoology, White Whales and Bowheads, Beaufort Sea

Investigator: D. E. Sergeant, Environment Canada, Arctic Biological Station
White whales were counted in the Mackenzie Delta from aircraft between July 12-28, 1975; their distribution being studied in relation to positions of Inuit hunting camps and oil drilling rigs and support craft. Bowhead whales were surveyed east to Baillie Island. The onset of pack ice into the Alaska coast in early fall 1975 almost trapped the out-migrating bowheads as well as the Prudhoe Bay support barges. In the eastern Archipelago, some 20 sightings of bowheads including calves indicate a steady recovery of this eastern population.

Biology: Zoology, Polar Bear, Archipelago
Investigator: I. Stirling, Environment Canada, Canadian Wildlife Service

The population study of polar bears and seals was completed in the Beaufort Sea and was initiated in the eastern Arctic in the study area of the Eastern Arctic Pipeline Program. Denning surveys were conducted on Prince of Wales and southern east Baffin Island. The effect of experi-

mental harassment on the behaviour and hunting efficiency of the polar bears on Devon Island (Radstock Bay) was documented. Reports have been published on the interrelationships of Arctic Ocean mammals, the caloric value of ringed seals in relation to the hunting behaviour of polar bears, and the birth lair habitat of the ringed seal. PCSP supplied fixed wing aircraft and logistic support.

Ecology: Zoology, Arctic Coast Grizzly Bear, Western Arctic
Investigator: A. M. Pearson, Environment Canada, Canadian Wildlife Service
 Grizzlies were captured live, marked, released and subsequently followed by radio telemetry throughout the active season from late April until early October. Forty-three captures were made in 1975 and 407 locations of individual animals were subsequently plotted. Twenty active dens were located during the 1975-76 winter and the ecological information on those dens will be recorded in 1976 after the snow cover dissipates and the bears leave the environs of the dens. Aircraft support was provided by PCSP.

Ecology: Zoology, Ringed Seals, Western Arctic, Central Arctic
Investigator: T. G. Smith, Environment Canada, Arctic Biological Station
 The 1975 season proved to be poor for ringed seal productivity in Prince Albert Sound and Amundsen Gulf and only limited success was achieved on the deferred birth lair studies. The proposed Arctic Island Pipeline study area was surveyed at various times from helicopter and fixed wing aircraft in search of birth sites and hauled up seals. A behaviour study of ringed seals was also conducted at Aston Bay to determine diurnal pattern, haulout and variation of frequency and type of underwater vocalizations. There was a large influx of animals each year into the head of Peel Sound prior to actual breakup of ice. A seal catching facility and laboratory has been established at Brown's Harbour on the east coast of Cape Parry where controlled biochemical and physiological experiments may be conducted. Logistic support was provided by PCSP.

Botany: Growth and Energy Budget, King Christian Island
Investigator: L. C. Bliss, University of Alberta

The third and final year of plant growth and plant-soil energy budget studies were completed on King Christian Island. These studies have included seed germination, seedling establishment and root growth of high arctic plants in a polar semi-desert. The second study has dealt with rates of photosynthesis of two species and the dissipation of heat and water by these species. In addition, the impact of surface disturbance on thermal energy dissipation and plant growth have been investigated. PCSP provided logistic support.

Climatology: North Water Project
Investigator: F. Muller, Swiss Federal Institute of Technology

During the winter of 1974-75 seven automatic weather stations were left on Coburg Island, at Cape Herschel and its neighbourhood and on Northwest Island (Carey Islands). The Coburg Island station served to continue the climatological and the sea ice observations and to re-measure the Laika glacier mass balance. The station at Cape Herschel served as the base for continuing the study of the climate and the sea ice conditions at the northern end of the polynya and provided the base for further investigations of the fast ice dynamics at the northern limit of North Water. The mass balance of Leffert glacier was also surveyed from this camp. During the spring of 1975, three remote sensing flights were carried out over the area. Using a PRT-5 infrared thermometer for the sea ice-open water temperature and three pyranometers for albedo measurements. The summer 1975 was the third season for the field study of sea ice mechanics on fast ice immediately north of the limit of the polynya. A two dimensional six-layer thermodynamic model with cloud cover and precipitation of the atmosphere above North Water was completed. Complete logistic and aircraft support was provided by PCSP.

Climatology: Ground Surface Stability in a Cold Region, Eureka
Investigator: M. W. Smith, Carleton University

During 1975, field work was completed, in the vicinity of Eureka, Ellesmere Island, NWT, for the evaluation of a computer simulation model designed to predict microclimatic and ground thermal regimes using basic water station data as the input.

In the previous year the model was tested against active layer prediction, snowmelt and freeze-back events with good success. Since the model relies on surface energy balance computations, energy balance measurements were carried out in 1975 at two sites throughout the period June to August in order to test this aspect. Ground thermal measurements continued until early in October. Comparison of observed and predicted energy balance components (net radiation, convection, conduction, evaporation) will serve to evaluate the physical consistency of the model predictions.

In addition to the microclimatic data gathered in 1975, an investigation was carried out on the growth patterns (phenology and biomass) of the forb *Polygonum viviparum*. Two habitats were investigated corresponding with the energy balance sites. It is hoped to relate the growth patterns to the corresponding microclimatic conditions. PCSP provided complete logistic support to this project.

Ecology: Oil Spills on Tundra, Tuktoyaktuk

Investigator: T. C. Hutchinson, University of Toronto (ALUR Program)

While the initial highly detrimental effects of the summer spills to tundra vegetation were confirmed, it became clearer in 1975 that, using a wide variety of parameters, the effects of crude oil spills of a given intensity had a lesser effect on the dwarf shrub and cotton grass tundra communities than on the taiga and boreal forest communities at Norman Wells. Spills made in winter had a lesser effect than summer spills, made during the season of active growth. None of the spills had a major effect on depth of active layer or on permafrost stability. During 1975, a significant number of mosses began to show recovery from oil effects which had

previously been anticipated to be of high sensitivity. At Cape Parry some of the lichens which encrust the rocks were found to have survived the 1974 spills. These were the first oil-resistant lichens described. Studies of oil effects on primary productivity and on zooplankton populations were continued in a small land-locked pond near Tuktoyaktuk. Both aquatic macrophytes and phytoplankton communities were found to show a lot of recovery from spills even of high intensity. Some colonizing euglenoid species were common in old spill areas and appeared capable of utilising hydrocarbons as an energy source. Logistic support was provided at Tuktoyaktuk by PCSP.

Geodesy: Arctic Doppler "75"

Investigator: D. L. MacQuarrie, Geodetic Survey of Canada, EMR

The 1975 doppler satellite positioning project was carried out in the Yukon, Mackenzie Valley, British Columbia, Prairie Provinces and Ontario covering an area of about five million square kilometres. The field work was done from April 26 to November 4. Six Marconi receivers were used simultaneously for the full field period with a seventh receiver used for four months. Seventy-five high precision geographical positions were determined at a spacing of 200 to 400 kilometres. Forty-five were coincident with existing primary control stations, and the balance were coincidental with or tied to lower order stations. Seven positions were established simultaneously with the United States National Geodetic Survey along the U.S. - Canada boundary. Considerable aircraft support was provided by PCSP in conjunction with logistical assistance at Tuktoyaktuk.

Geodesy: Horizontal and Vertical Control, Victoria and Banks Islands

Investigator: B. Justason, Geodetic Survey of Canada EMR

Work done involved the establishment of horizontal and vertical control with transits and tellurometers, establishment of vertical control with altimeters and the identification of survey markers with aerial photography. The purpose of this work is: to provide horizontal control for 1:50,000 scale mapping in areas where existing surveys are not adequate, to provide vertical control for the 1:50,000 scale mapping of Banks Island, to breakdown the existing Army Survey traverse grid into smaller loops, to tie together and strengthen the Army Survey traversing, to re-measure suspect observations, and to increase the control density so as to leave a good network of survey markers positioned to second or third order specifications. PCSP co-operated to provide logistical support.

Geology: Arctic Marine Surficial Geology; AIDJEX

Investigator: B. D. Bornhold and C. F. M. Lewis, Geological Survey of Canada, EMR
A program of sediment sampling and sea floor photography was undertaken at AIDJEX in the Arctic Ocean at approximately 75°25'N, 140°00'W. Benthos and Alpine gravity corers were used to sample the sea floor while the camera system, launched vertically through the hydro-hole, assumed a horizontal attitude beneath the ice. The best configuration technique for the corers was to lower a heavily weighted Benthos corer with only a plastic core liner (no steel barrel, cutter or retainer) slowly into the sediment. Over 110 useable seafloor photographs were obtained and several distinct types of biogenic structure were apparent although none of the responsible organisms were photographed. Spherules of extraterrestrial origin were recovered in one bottom sample.

Geology: Coastal Processes, Somerset Island

Investigator: R. B. Taylor, Geological Survey of Canada, EMR

The research dealt primarily with beach profile change over time and the effect of sea ice on coastal features and processes. Beach change has been monitored

at 10 beach profiles on northern Somerset Island since 1972. Most of the changes have been caused by ice push. In 1974, beaches experienced considerable change probably because storm waves developed in Barrow Strait in ice-free conditions. Additional research conducted in 1975 was the continuation of an estuarine study in Cunningham Inlet, seasonal and diurnal temperature fluctuations across the beach and the monitoring of wave parameters and resultant beach sediment transport. Furthermore, an examination of coastal features and processes was completed on Lowther and Russell Islands. Logistics support for the project was solely provided by PCSP.

Geology: Exploration and Development Arctic Islands

Investigator: W. Gibbins, DIAND

Visits were made to areas of potentially economic geological interest and mines to evaluate the properties and reports. Somerset Island and Victoria Island were of particular interest in view of the kimberlite discoveries. PCSP provided some aircraft and other support.

Geology: Geomorphology, Mackenzie Delta

Investigator: J. R. Mackay, University of British Columbia

Relic syngenetic ice wedges, formed as sediments were accumulating and still preserving the original ice veins, were found at Hooper Island. A thaw unconformity (dating from the Hypsithermal or earlier) at a depth of two to three metres below the ground surface, has been observed in many coastal exposures from Garry Island to Tuktoyaktuk. Studies were carried out on two pulsating pingos which tops rise and subside in response to the accumulation and escape of free water beneath the ice core. Other continuing studies have dealt with ice segregation depth, the growth of ice wedges, lake drainage, pingo growth, and the ionic content of permafrost. Complete logistical support is provided by PCSP.

Geology: Geomorphology, Pingo Investigations, Banks Island

Investigator: H. M. French, University of Gawa

In addition to compiling a pingo distribution map of the island, attention was concentrated upon groups of small pingo-like mounds, and various pingo-like ridges. The objectives were to establish the existence of ice cores within these features and, if successful, to remove ice samples for crystallographic and chemical analysis. Sections were cut using a portable Ajax fire pump. Pingo-like mounds were visited at Central Bernard River, Upper Schs River, Thomsen River and Able Creek. Samples for C-14 dating were taken. The explanation for these various peculiar features is uncertain. Complete logistic support was provided by PCSP.

Geology: Quaternary Geochronology, Bathurst, Banks and Ellesmere Islands

Investigator: W. Blake Jr., Geological Survey of Canada EMR

The Stuart River Valley, Bathurst Island was revisited for further study and collecting. Peat layers separated by gravel all underlain by pond deposits have been assigned to the Stuart River Inter-glaciation. Raised beaches a few kms. north of Cape Storm on Ellesmere Island yielded many pelecypods for dating; these are "old" rather than postglacial in age. Plant detritus and wood from sites near Nelson Head, Banks Island were collected for radiocarbon age determination. Support in the field was provided by PCSP.

Geology: Surface Process Studies, Banks Island

Investigator: T. J. Day, Geological Survey of Canada, EMR

Complete logistic support was provided by PCSP to this study of fluvial processes, river hydrology, riverbank erosion and sediment production, and coastal processes at various locations on Banks Island. Studies of channel morphology and processes were undertaken along the major river systems with data collected on

channel geometry, slope, sediment character and morphology as well as runoff regime, river ice, sediment sources and active layer development. Hydrologic studies were undertaken on the Thomsen River and three tributaries. Sixteen representative beach profile sites were studied; volumetric beach changes appear to be typical for western Arctic beaches.

Geology: Postglacial Activity, Northeastern Ellesmere Island

Investigators: J. England, University of Alberta and R. S. Bradley, University of Massachusetts

On Judge Daly Promontory, observations were made on the distribution of low-lying, topographically-controlled snowbanks and on the Quaternary surficial geology. This latter work focused primarily on the distribution and relative ages of deposits from previous glaciations in the area and on the mapping of stratigraphically-related, raised marine deposits. Of principal significance was the mapping of a zone of distinctive Greenland till which extends onto northeastern Ellesmere Island. At least one, and possibly two Ellesmere Island glaciations are in evidence along the east coast. The dating of organic material should define the age of glaciation. PCSP supported this project with field logistics.

Geology: Surficial Deposits, Banks Island

Investigator: J. S. Vincent, Geological Survey of Canada, EMR

Efforts were concentrated in the western part of the island to identify and distinguish the Beaufort Formation from the more recent tills etc. derived from that formation. Small drills, Haynes and Winkie, were used in the field to obtain shallow samples of soils for analysis, in a lab set up in the field camp. Another aspect of the work was to define the manner of deglaciation of the last Wisconsin advance which covered the eastern and southern areas of the island. Full fixed wing and helicopter support was provided by PCSP.

Geology: Quaternary, Somerset and Prince of Wales Islands

Investigator: J. A. Netteville, Geological Survey of Canada, EMR

The field component, primarily involved in traversing by helicopter, providing information on texture, lithology, origin and moisture content of materials as well as their morphology, surface drainage, and depth to the frost table. Detailed investigations using portable coring equipment were oriented primarily towards the study of ground ice characteristics of fine-grained sediments. On the basis of field observations and interpretation of photomosaics, LANDSAT imagery, and topographic maps, the study area was divided into 32 terrain regions distinguished by differences in thickness, texture and origin of materials, and by relief and slope. Nearly 100 per cent of the ground has been modified in some manner by periglacial features. A relative glacial chronology for Somerset and Prince of Wales Islands has been devised. Logistic support was provided through PCSP.

Geology: Beaufort Formation, Meighen Island

Investigator: J. V. Matthews, Geological Survey of Canada, EMR

The Beaufort Formation on Meighen Island contains intercalated marine clays, one exposure of which contained fragments of a large marine pelecypod, a late Tertiary mollusc. Several localities with articulated beetle fossils were discovered in 1975. The presence for the first time of fossil cones of an extinct spruce was noted in 1975. This causes controversy over age of the Meighen Island sediments because these *Picea* fossils and certain insect fossils yield conflicting dates for the sedimentation process. One more Holocene shell site was also found. PCSP provided aircraft and logistical support.

Geology: Paleontology, Eureka Sound Formation, Ellesmere Island
Investigator: R. M. West, Milwaukee Public Museum and M. R. Dawson, Carnegie Museum of Natural History
 Geophysical models of the evolution of the North Atlantic Ocean, in the context of plate tectonics, has led to the conclusion that the Eureka Sound Formation (late Cretaceous and early Tertiary in age) is the most likely place to obtain paleontological information substantiating a North America-Europe link across what is now the North Atlantic in the early Tertiary. Two localities at Strathcona Fiord yielded the first Tertiary fossil bone ever to be found in the Northwest Territories. Preliminary studies indicate several kinds of fish, alligators, with a possible European affinity, turtles, and at least two genera of mammals which also have similarities to European taxa. The vertebrates confirm the exchange route during the Tertiary and suggest, for at least part of the time, that the climate of northern Ellesmere Island was truly moderate, perhaps even more so than previous paleobotanical and palynological studies suggest. The reptiles and mammals are possibly early or Middle Eocene in age. Aircraft and logistic support were provided by PCSP.

Geology: Stratigraphy, Leopold Formation, Somerset Island
Investigator: O. A. Dixon, University of Ottawa
 Three main sections were measured and material collected for petrographic and paleontological study. There are some differences between these three localities and the type section at Port Leopold. Complete logistic support was provided by PCSP.

Geology: Stratigraphy, Reynolds Point Formation, Victoria Island
Investigator: G. M. Young, University of Western Ontario
 The main purpose of the field work was to carry out detailed section measurement, sampling and paleocurrent analysis of the Reynolds Point Formation (part of the Late Proterozoic Shaler Group) in the northern part of the Minto Arch in order to delineate the environments of

deposition of these rocks and to establish the paleogeography of these times. The field work permitted extension of previous work into the Natkusiak Peninsula. Additional stromatolite samples were collected to permit comparison with a very similar sequence in the Mackenzie Mountains region. This project was supported logistically by PCSP.

Geology: Stratigraphy, Northern Ellesmere Island
Investigator: H. P. Trettin, Geological Survey of Canada, EMR
 Gabbroic sills and dykes in upper Paleozoic and Mesozoic rocks were sampled around Tanguary Fiord as well as the chiefly metamorphic terrain on the north coast of Ellesmere Island. The lower and upper Paleozoic and the Mesozoic stratigraphy from Agassiz Ice Cap to Yelverton Bay was investigated with the purpose of building a coherent stratigraphic framework that reflects the depositional history of the region. The Eureka Sound and the Beaufort Formations in the same area were also studied. PCSP assisted these studies through provision of fixed wing flying and logistic support.

Geology: Operation Boothia, Somerset Island
Investigator: J. W. Kerr, Geological Survey of Canada, EMR
 Operation Boothia is a comprehensive study of the bedrock geology of Somerset Island and Boothia Peninsula. The Boothia Uplift (part of the Churchill Province of the Canadian Shield) and the Cornwallis Fold Belt (folded sediments overlying and adjacent to the former) are a pair of related north-trending structural features dominating Somerset Island. It is hoped to relate the timing and nature of deformations in the Shield and the overlying cover rocks. Paleomagnetic and earthquake risk studies were supported on Somerset Island as adjuncts to the 1975 program. All but one of the known kimberlite diatremes on Somerset Island were visited; they are deduced to be post-Late Silurian in age and their intrusion appears to have been controlled by a northeast-southwest element of the trending structures of the Boothia Uplift. PCSP provided logistic support to this project.

Geophysics: Gravity, Victoria Island
Investigator: W. E. F. Burke, Earth Physics Branch, EMR
 PCSP provided complete support to complete the gravity coverage of Victoria Island. A total of 638 stations were surveyed.

Geophysics: Seismic, Permafrost, Tuktoyaktuk and Somerset Island
Investigator: J. A. Hunter, Geological Survey of Canada, EMR
 Studies of geophysical properties of permafrost in the Mackenzie Delta are continuing. Experiments to measure the thickness of the frozen zone and estimates of ice content were conducted in various types of surficial deposits. Off shore in the Beaufort Sea, marine seismic refraction techniques were employed to map the occurrence of sub-seabottom permafrost. On Somerset Island shallow seismic resistivity and borehole logging techniques were applied to ascertain physical properties of typical surficial sediments. These activities were supported extensively by PCSP.

Geophysics: Geothermal, Arctic Archipelago
Investigator: A. Judge, Earth Physics Branch, EMR
 A program of borehole temperature measurements was continued at 15 sites in the Arctic Islands and five sites in the Mackenzie Delta with logistic assistance provided by PCSP. The results of these measurements add considerably to the information on permafrost thickness and distribution and in some cases considerably change the earlier interpretations based on wire-line logs. The preliminary results are being used extensively by the regulatory agencies and resource companies. The detailed analysis of the data is leading to an understanding of the distribution of permafrost and its relationship to terrestrial heat flow, surface temperature history and surface topography. Recently, it has become apparent that permafrost can also be present beneath the sea-bottom. Sea-bottom temperatures were acquired by a helicopter supported program in Barrow Strait and an area being considered as a pipeline crossing area under the Eastern Arctic Island Pipeline Program.

Geophysics: Geomagnetic Depth Sounding, Yukon and Mackenzie

Investigator: J. M. DeLaurier,
Earth Physics Branch, EMR

A profile of nine portable fluxgate magnetometers spaced 40 km apart was installed on helicopters along 69°N geomagnetic latitude from the Yukon-Alaska border to the operation was provided by PCSP. The profile extended a distance of 320 km and recorded three components of magnetic variations for 18 days on digital magnetic tape at a sampling interval of 20 seconds. Preliminary examination of the data has shown that the anomalous electrical force suppression seen further north on Banks Island is not present here. The similarity of magnetic variations along the profile suggest that major differences in electrical conductivity of the crust and upper mantle do not occur between the cordillera and plains area in this region.

Geophysics: Electrical Mapping of the Lenafröst, Tuktoyaktuk

Investigator: W. J. Scott, Geological Survey of Canada, EMR

The radar soundings and profiles taken at the Involut Hill test site near Tuktoyaktuk indicate that where surface materials are coarse grained (sand and gravel) or where the material is ice, radar echoes can be detected from depths as great as 35 meters. Where the surface material is fine grained (clay-till), no returns from depth are observed except for the very thin layers (less than 1m) over the more transparent material. It is concluded that the radar technique is of limited utility over fine grained surficial materials, but of excellent potential over coarser media. During the spring season, DC resistivity soundings were undertaken through the ice on Kugmallit Bay despite array sizes as large as 1000 (L/2, Schlumberger array) the base of the permafrost was not observed, although depths to the top were clearly indicated. During the summer season, a marine resistivity survey was carried out on a lake near the Tuktoyaktuk peninsula and preliminary examination of the field data indicates that sub-bottom permafrost can be mapped with some

degree of reliability. VLF resistivities were read on a number of small grids in the vicinity of the Involut Hill site, to provide data for comparison with the airborne E-Phase survey flown in 1973. PCSP provided full logistic support.

Glacier Physics: Meighen, Melville, Devon, Bylot Islands

Investigators: R. M. Koerner, Polar Continental Shelf Project

The mass balance for the balance year 1973-74 was measured on the Meighen ice cap, the Melville Island southern ice cap and the north-west side of the Devon Island ice cap during late April, early May 1975. The results give annual balances of -5 g cm^{-2} , -18 g cm^{-2} , and -8 g cm^{-2} respectively. The winter balances (1974-75) were 10 g cm^{-2} for the Meighen Ice cap, 17 g cm^{-2} for the Melville Island southern ice cap and 8.6 g cm^{-2} for the northwest side of the Devon Island ice cap. A strain net was remeasured on the northwest side of the Devon Island ice cap at 1300 m asl. to determine a long-period mass balance for that elevation. A profile across the Sverdrup Glacier at 300 m asl. was levelled to compare with similar surveys performed in 1961 and 1971. A 12 m core was taken on the Bylot Island ice-field at 1800 m asl. Pollen samples were collected on all four ice caps.

Glaciology: Photogrammetry and Aerial Photography

Investigator: K. C. Arnold, Environment Canada, Inland Waters Directorate

Aerial photography included pipeline routes, scientific research sites, effluent discharge, townships, ferry crossings, ice-jamming sites on Liard and Mackenzie Rivers, bridge and wharf sites and oil spill test areas. Mid-summer photography included several glaciers on Ellesmere Island and potential river pipeline crossings on Somerset Island. Late summer photography included other glaciers on Ellesmere Island, the Franklin encampment area on Beechey Island and the Meighen Island Ice Cap. PCSP supplied total aircraft support.

Glaciology/Climatology: Axel Heiberg Island

Investigator: F. Muller, Swiss Federal Institute of Technology

In 1975, six holes were drilled (depths vary between 60 and 210m) on the White Glacier using an open system hot water drill and were instrumented with thermistor-cables for temperature measurements. The sites were chosen to form a longitudinal profile along a flowline starting in the superimposed ice zone at an elevation of 1020 m and reaching to 600 m a.s.l. in the ablation zone. The data collected essentially confirm the conceptual model of the thermal regime of arctic valley glaciers. In April the winter accumulation was measured in snow pits in the upper part of White Glacier. From June to August, ablation was measured at a network of ablation poles and due to heavy summer snowfalls, the equilibrium line remained low. Glacier structures such as crevasses, foliation patterns and shear planes were mapped for the lower part of White Glacier and their orientation measured. To study the relationship between structures and glacier movement the main axis and magnitude of the strain was measured. Full logistic support was provided by PCSP.

Hydrography: Nares Strait

Investigator: J. H. Wilson, Environment Canada, Canadian Hydrographic Service

Nares Strait was spot sounded from Latitude 78-45N to Latitude 81-40N. Hall Basin, Kennedy Channel and the Canadian side of Kane Basin were sounded on a three kilometre grid. The smaller fiords along the Canadian side were sounded at one, and half-kilometre line spacing with one kilometre and less between soundings along the lines. The Danish side of Kane Basin was not done but both sides of the border in Kennedy Channel and Hall Basin were surveyed. Very little additional control was required for the Nares Strait survey. On the Canadian side there were existing Army Survey stations and on the Greenland side there were C.H.S. stations which had been established in 1972 in preparation for this survey. For future bathymetric surveys of proposed pipeline crossing areas, the existing Army Survey horizontal control points were recovered in a few of the most likely crossing areas: Peel

Sound, Franklin Strait, Byam Channel, Austin Channel, Northern Penny Strait and Belcher Channel. The control in Northern Penny Strait and Belcher Channel was also recovered in preparation for the 1976 hydrographic survey. Considerable aircraft and logistic support were provided by PCSP.

Hydrology: Thomsen River Basin, Banks Island

Investigator: J. C. Anderson, Environment Canada, Inland Waters Directorate
PCSP supported a program of collecting and analysing basic hydrologic data (river basin discharge, suspended sediment concentrations, water chemistry, distributions of snow and ice) and basic meteorologic data (precipitation, temperature, wind direction and speed). Preliminary analysis has revealed the major role played by winter snow accumulation (amount and distribution) as it affects the runoff regime.

Hydrology: D'Iberville Fiord, Ellesmere Island

Investigator: J. P. Chywilia, Environment Canada, Inland Waters Directorate
A comprehensive study of water quality, soil thermal properties and hydrological investigations was undertaken in a small watershed draining into d'Iberville Fiord during the spring snowmelt season. Calcium and sulfate ions predominate in the dissolved solids load of the surface waters. A diurnal trend of soil temperature was observed, while soil heat flux was subject to more random variation. PCSP provided logistic support.

Hydrology: Vandom Fiord, Ellesmere Island

Investigator: S. B. McCann, McMaster University
A third season, again supported by PCSP and funded by DOE, was spent investigating the hydrological regimes by measuring discharge and sediment load of the Sverdrup and Schei Rivers and to determine their response to changing meteorological inputs. Another objective was to examine spatial and temporal variations in active layer drainage within a restricted area, to relate drainage conditions to various components of the water balance for the summer season

and to relate the runoff regime of a small non-glacierized basin to active layer drainage conditions within the basin.

Oceanography: D'Iberville Fiord, Ellesmere Island

Investigator: R. A. Lake, Environment Canada, Frozen Sea Research Group
Work undertaken in d'Iberville Fiord was part of an ongoing study of physical oceanographic parameters in an Arctic fiord. An Aanderaa recording current meter was placed on the fiord floor at the sill and another just under the sea ice. Data were transmitted to automatic data recording equipment located on shore. Time series measurements of current and current profiles were taken using a prototype current meter developed by the Christian Michelsen Institute, Bergen, Norway. Water levels were measured at the head and mouth of the fiord at the rate of one record per minute for a 15 day period using Aanderaa water level gauges. Film from time lapse cameras deployed in spring 1974 was recovered from various rivers and from cliffs overlooking the head of the fiord and d'Iberville Glacier. The recording current meters were recovered in June and currents in the fiord just below the sea ice were measured at the time when runoff from land was at its peak. This work was supported by PCSP.

Sea Ice: Aerial Surveys, Arctic Archipelago

Investigator: D. G. Lindsay, Contractor to Polar Continental Shelf Project, EMR
The systematic aerial sea ice reconnaissance surveys conducted by the PCSP from April through October 1975 marked the fifteenth consecutive year for this program. Observations of the sea ice conditions in the channels of the Arctic Archipelago between Alert and Tuktoyaktuk and from Baffin Bay to the Arctic Ocean were made eight times during the season. The majority of the surveys were concentrated in the Queen Elizabeth Islands and Parry Channel. The 1975 program was expanded to collect more information relating to the orientation of pressure ridges, cracks and leads. A publication entitled, *Sea Ice Atlas of Arctic Canada, 1961-68*, has been completed and will be distributed by information Canada.

Sea Ice: Dynamics of First Year Ice Investigator: P. F. Cooper, Jr., Polar Continental Shelf Project, EMR

The geometric deformation of the ice surface has been studied using invar surveying tapes as strain gauges. Three radii from a point were measured at the resulting data being used to express the change of a circle into an ellipse, in analogy with theories of strain. The angle the ellipse's semi-major axis makes with some prime direction, the eccentricity and the dilatation (ratio of final ellipse to original circle) have been determined. Results show a continuing overall decrease in area as well as a deformation in which the ice surface expands in a direction roughly parallel to the prevailing winds and contracts in the perpendicular direction. The sum of these two effects is to render the contraction that takes place perpendicular to the wind much larger numerically than any expansion, and in fact, almost all the observations could be characterized simply as showing only such a contraction.

Sea Ice: Arctic Ice Dynamics Joint Experiment (AIDJEX)

Investigator: N. Untersteiner, University of Washington
The Arctic Ice Dynamics Joint Experiment (AIDJEX) is a multinational co-operative research program to determine the interaction of air, ice and water. Canadian participation in the field program is supported and co-ordinated through the Polar Continental Shelf Project. The camps were established during March 1975 on the Arctic Ocean and will be utilized until May 1976, at which time the experiment will terminate. Canadian scientists concerned with Arctic oceanography, gravity, magnetics, tilt of the ocean ice surface, seismic anisotropy, bottom geology, wind and water stress and remote sensing have been supported logistically and financially to undertake their unique investigations at AIDJEX.

Support was also provided for:

- a study of the biological fixation of nitrogen in sedge moss at the Truelove Lowlands station on Devon Island;
- stratigraphic studies of the Paleozoic dolomites of north Devon Island;
- a survey of benthic marine algae;
- a study of feeding habits and patterns of caribou, muskox and Arctic hare at Mokka Fiord;
- climatology-meteorology observations on Bathurst Island in a study of the interrelationship of ivory gulls and climate;
- a meteorological study of Barrow Strait and environs with input to the study of ice formation in the area;
- investigations into the impact of natural ignite burning of great antiquity on terrestrial and aquatic ecosystems;
- a study of geomorphological processes and terrain disturbance at and near Sachs Harbour, Banks Island (ALUR Program);
- geochemical and sedimentological studies of the Lower Paleozoic carbonate sequence of Somerset and Cornwallis Islands;
- lake studies in the Mackenzie Basin, NWT;
- hydrologic studies at culvert sites along the Mackenzie Highway;
- oceanographic and underwater acoustic measurements;
- physiological and microbiological investigations in the marine ecology of the Eskimo Lakes;
- historical research of the Franklin Encampment area (1845-46) on Beechey Island.

Plans for 1976-77

The largest single call upon PCSP expertise will be the Eastern Arctic Island Pipeline Program out of Resolute to the north, in general on Somerset and Prince of Wales Islands and the Boothia Peninsula. The Decca Navigational chain will

be located west of Banks Island and in Amundsen Gulf in March-April to permit completion of the gravity-hydrographic program in those areas. During the summer navigation season, the vessel *Parizeau* will operate in the eastern Beaufort Sea with the assistance of the Decca Navigation system. AIDJEX will terminate in May 1976 and one fixed wing aircraft will be terminated from contract at that time.

An estimated 100 projects involving more than 400 people will be supported in 1976 through base camps at Tuktoyaktuk and Resolute. Five chartered helicopters and four fixed wing chartered aircraft will be flown in support of those 100 projects. In addition to the main base camps at Tuktoyaktuk and Resolute, smaller camps will be maintained at Norway Island, Sachs Harbour, Baillie Island, Atkinson Point, Cape Parry, Point Bering and Bathurst Island.

Long-term Plans

Field surveys and research will eventually cover the Canadian sector of the Arctic Continental Shelf of North America, those parts of the Arctic Ocean basin that are of interest to Canada, and those parts of the Arctic Archipelago and arctic mainland of interest to the Department of Energy, Mines and Resources and not investigated by other agencies. It is intended that program co-ordination and support logistics of the project shall be made available, where appropriate and approved, to scientific activities of interest to the Government of Canada in any part of Arctic Canada or the adjacent oceans.

Task Force on Northern Oil Development

The Task Force on Northern Oil Development is an interdepartmental group that was established in December 1968 to advise the Federal Government on all regional and national matters relating to northern oil and gas development. It carries out studies and research and makes recommendations concerning oil and gas exploration, production, transportation and marketing, with particular emphasis on northern oil and gas transportation.

The Task Force is chaired by the Deputy Minister of Energy, Mines and Resources and includes the Deputy Ministers of Indian and Northern Affairs, Environment, and Transport, and the chairman of the National Energy Board. It conducts its program through the activities of six committees.

The Pipeline Engineering Committee appraises all matters relating to the construction and operation of oil and gas pipelines in the North. It is concerned with specifications and design standards, construction methods, mode of operation, maintenance and safety features.

The Marketing Committee is responsible for assessing the possible effects of northern oil and gas on the energy supply and demand patterns of North America.

The Economic Impact Committee assesses the expected impact on the economy of the construction and operation of northern pipelines. It gives attention to the effect on the economy of the large related capital expenditures in terms of employment benefits, regional impacts, the balance of payments, costs of goods and services, exchange rates and availability of finances.

The Transport Committee evaluates transportation and related proposals, including rail, large aircraft, and other alternatives to pipeline transportation. It is also involved in feasibility studies of harbours, docking facilities and transportation routes in the High Arctic.

The Industrial Supply Committee assesses the capability of the Canadian market and economy to supply the labour, materials and equipment needed for northern pipeline construction and operation.

The Environmental-Social Committee is responsible for environmental and sociological studies related to pipeline construction and operation and involves work of sociologists, geologists, geophysicists, cartographers, biologists, specialists in forestry, water resources and wildlife, and other environmentalists. The Task Force maintains contact with representatives of northern communities and groups representative of the general public.

The Environmental-Social Program, Northern Pipelines, is the functionary arm of the Environmental-Social Committee. It co-ordinates the environmental and regional socio-economic research and studies which are funded through the Committee and the Task Force. By the end of 1975-76 some 400 reports based on work carried out under the programs in the Mackenzie Valley and northern Yukon had been published. The primary reports were published under the Environmental-Social Committee (many available from Government bookstores) but in addition many reports and papers were published by the participating departments and in the proceedings of conferences and seminars or in professional journals.

In 1975-76 the Environmental-Social Program embarked on a program of environmental and regional socio-economic studies of a proposed eastern arctic pipeline. For the current year studies were restricted to areas north of Spence Bay until a decision is made on the routing east or west of Hudson Bay.

Major participants in the research for this Program are the Departments of the Environment, Energy, Mines and Resources, Indian Affairs and Northern Development and the Government of the Northwest Territories. Information on research projects and published reports may be obtained from the Senior Pipeline Co-ordinator, Environmental-Social Program, Northern Pipelines, Department of Indian Affairs and Northern Development, Ottawa.



Ice test on the Beaufort Sea, to determine ice movement and changes in currents. Two members of the research team measure the strength of the ice

Department of the Environment (DOE)

Responsibilities

The Department of the Environment Canada is responsible for leadership at the national level in the management of renewable resources and protection and enhancement of environmental quality. In co-operation with appropriate agencies, its roles might be summarized as follows:

- to provide a national voice of knowledge and information on the natural environment and renewable resources;
- to draft environmental requirements or the maintenance and enhancement of environmental quality and productivity;
- to guide international and inter-governmental negotiators on environmental matters, or under appropriate conditions, to be the negotiators;
- to manage the fisheries and migratory birds;
- in co-operation with appropriate agencies, to manage the air, water, lands, forest and wildlife;
- to implement and, where appropriate, to enforce legislation and regulations falling within its jurisdiction;
- to monitor environmental activity in federally-controlled or-financed activities.

The Department of the Environment comprised of five services: Atmospheric Environment, Environmental Protection, Environmental Management, Fisheries and Marine, and Planning and Finance. The organization is reflected in the presentation of the following material.

Atmospheric Environment Service

Responsibilities

The Atmospheric Environment Service (AES) is responsible for the provision of historical, current and predictive meteorological, ice and sea-state information services for northern areas, and for advice and consultation on the effect of meteorological, ice and sea-state conditions on natural processes and on human activities in the Arctic. AES is responsible for carrying out research and development to improve the information services and for undertaking research to increase knowledge of atmospheric processes and the dynamics of ice and windwave interactions. AES is also responsible for monitoring air quality (composition of the atmosphere) and for providing advice and consultation on the effects of human activities on the Arctic atmosphere.

Review of 1975-76

The AES operated two types of permanent meteorological observing networks to fill the continuing and increasing need for basic data by users of meteorological information in northern Canada. The stations in these networks carried out various observations according to internationally established standards. These observations included soundings of the atmosphere in depth with balloon-borne instruments (rawinsondes), synoptic surface-based observations of instrumental and visual elements at three- or six-hourly intervals, and hourly surface observations. A third permanent network of climatological stations added basic surface measurements of temperature extremes and of precipitation to those made by stations in the major networks.

At the close of the fiscal year there were 68 principal stations of which 15 provided upper air (rawinsonde) measurements of temperature, humidity and wind at altitudes up to 30 km as well as providing, with the other 53 stations, reports of standard surface-based measurements of air temperature, barometric pressure, humidity, wind, cloud and precipitation.

A Meteorological Automatic Reporting Station (MARS), installed at Port Radium, became operational during the year, and as the year came to a close, a similar facility, installed at Teslin, YT, was nearing the operational stage. Also, three stations in the Distant Early Warning (DEW) Line increased their meteorological observing program from four reports a day to eight, and three other DEW sites increased their reporting times from four a day to twenty-four (hourly). The climatological network consisted of 62 stations.

Other programs of observations, particularly relevant to the northern area of Canada continued throughout 1975-76. These included 29 snow survey sites reporting weekly measurements of depths and water equivalent of the snow accumulation; 59 reporting sites of freeze-up and break-up data of the ice cover on the sea, lakes and streams; 27 sites reporting weekly measurements of ice thickness; and 34 reporting shore ice conditions during the navigation season. The testing of a new method of measuring ice thickness using a hot-wire gauge continued at seven sites. Portable electric generators were supplied at two sites with the remaining stations utilizing 12 volt batteries for heating the hot-wire.

Marine weather observations were reported on a regular schedule during the navigation season by nine government and six commercial vessels.

Observational programs of a more specialized nature continued at many of the Arctic stations. Six stations recorded soil temperatures at a number of levels below the earth's surface. Eight stations reported on water evaporation during the summer season, of which three of these involve the use of a radioactive trace element (tritium). Twenty-seven stations measured the duration of bright sunshine; 17 stations participated in a noctiluent cloud observation program, and 15 recorded measurements of solar and terrestrial radiation.

The Upper Air Station at Resolute reports daily measurements of the total ozone in the atmosphere and these are supplemented by weekly measurements of the ozone layer in the high atmosphere by a balloon sounding instrument. Air turbidity and chemical pollutants in precipitation are measured at Fort Simpson and chemical pollutants in precipitation are measured at Mould Bay. Carbon dioxide (CO₂) flask sampling was initiated at the Alert Weather Station, and is one of three background monitoring stations established in Canada.

Two programs continued to be conducted for other government agencies at AES Arctic stations: radioactive sampling of the atmosphere for the Department of National Health and Welfare at five sites; and observation of seismological records for the Department of Energy, Mines and Resources at Inuvik, Frobisher and Whitehorse. In addition to these, AES provided support for EMR staff conducting seismic and geomagnetic recordings at Baker Lake and Resolute; and accommodation and other support for EMR staff at Alert and Mould Bay. AES continues to operate and maintain a neutron monitor gamma-ray project at Alert for NRC's Herzberg Physics Institute.

AES continues to operate weather stations under the title High Arctic Weather Stations and provides a wide range of support to government and other scientific agencies at Resolute, Isachsen, Eureka, Mould Bay and Alert.

Four of the surface weather stations of the principal network, Cape Dorset, Koartak, Old Crow and Pond Inlet continued to be operated by Indian and Inuit people. A number of stations in the climatological network continued their operation staffed by indigenous people. Since December 1974, half a dozen young women have joined the staff at isolated weather stations.

An inspection program continued to provide on-the-job staff training; to determine site selection for the establishment of new stations; and to maintain and install the station instruments and equipment. During the year, a total of approximately seven man-years were devoted to this activity; the total including both the actual visits to the Arctic sites and the extensive preparations at the inspectors' headquarters required beforehand. While this activity represents a relatively high level, experience shows that more time must be devoted to those environmental parameters: the difficulty of travel, and the extra time required in dealing with observing programs which are operated by contractual arrangements and which, in the cases noted above, involve the training and guidance of native people.

A resident inspector assigned to Whitehorse is responsible for inspection, installation and maintenance activities for the Yukon. There are three resident inspectors in the area north of 60°, with two men on the DEW Line and one in the Yukon.

The staffing of the 68 principal weather stations at the close of 1975-76 was as follows:

| | |
|------------------------------|----|
| AES | 14 |
| AES/CATA (MOT) | 8 |
| CATA (MOT) | 13 |
| DEW Line | 17 |
| Contract | 15 |
| Automatic reporting stations | 1 |

Two new stations for the principal surface network were established at Fort Burwell and Port Radium, NWT; two were closed at Brevoort Island and Resolute Island, NWT.

Various communication facilities are used by AES to provide weather data on a real time basis for national and international use, and to provide a return flow of forecasts and advisories. Where appropriate, both teletype and facsimile communications are used through a combination of MOT operated radio circuits, circuits in the DEW Line forward scatter facilities and lease of circuits from the common carriers, some of which use AES facilities.

A number of stations in the Yukon and Northwest Territories, including Inuvik, Whitehorse, Yellowknife and Frobisher have direct connection to the national weather facsimile system, operated by common carriers. Other areas of the Central High Arctic are served by radio facsimile broadcast from VFE Edmonton.

Following the termination of each five day ice reconnaissance aircraft operating out of Inuvik, Resolute and Frobisher, direct transmissions of ice data in facsimile chart format over telephone or broadband circuits to the Ice Forecast Centre in Ottawa. While airborne, the aircraft make scheduled radiofacsimile broadcasts to ships operating in the northern navigation areas.

Weather forecasts for the North are issued on a scheduled basis by the Alert. The technique of weather forecasting utilizes the data received from the North as well as that from all the northern hemisphere. The Canadian Meteorological Centre (CMC) in Montreal is responsible for broad-scale weather analyses, pressures and selected forecast material. The Centre is supported by a large computer. CMC has access to weather satellite data and information from the World Meteorological Centre in Washington. Output from the CMC is distributed via teletype and facsimile throughout Canada, including the North, to support forecasting and weather service activities. The Arctic Weather Center/Weather Office in Edmonton produced forecasts for much of the Arctic. Forecasts for the Yukon are produced at Whitehorse. The Department of Environment has an Environmental Prediction Service

weather, waves, and ice) to support offshore drilling in the Beaufort Sea was developed and tested at the Arctic Weather Center in Edmonton.

Current and predicted weather information for northern areas was routinely supplied as follows:

- high-level winds and temperatures for aviation produced by computer in Washington and distributed in Canada by teletype and facsimile;

- lower-level winds and temperatures for aviation produced by computer in the CMC in Montreal and distributed by teletype;

- weather forecasts for aviation in the North issued from the Yukon Weather Office and the Edmonton Arctic Weather Office and distributed by teletype and radio;

- a general weather summary and forecast for the Arctic is prepared at Edmonton. More detailed forecasts for the general public are prepared at Whitehorse for the southern and central Yukon and at Edmonton for selected locations in the North. These forecasts reach the public by the CBC northern radio and television networks and other private commercial outlets; marine forecasts are prepared during the shipping season for Arctic coastal waters, Hudson Bay and the inland waters of Great Slave Lake, Great Bear Lake and the Mackenzie River. These forecasts are broadcast by MOT Marine Radio Stations on regular schedules;

- fire-weather forecasts are prepared during the forest fire hazard season at Forest Fire Control centres in Whitehorse and Fort Smith;
- weather services consisting of briefing, presentation and consultation are available at Whitehorse, Yellowknife, Inuvik, Resolute, Frobisher and Churchill. A more limited type of weather service is available at many other points with connections to the AES Communications System; and instruments for measuring meteorological parameters were replaced or installed at a number of sites. Specialized instrumentation for use in the Arctic climate and with a potential for automation are being developed and evaluated.

Atmospheric Instruments Branch

The Atmospheric Instruments Branch continued the testing of the Climatological Automatic Recording Station (CARS). A pilot project installation, 150 miles northwest of Cambridge Bay, was made for the purpose of assessing installation techniques and evaluating the performance of the equipment under operational conditions in the Arctic.

In addition to the meteorological Automatic Recording Stations installed at Port Radium, the Great Bear Lake MARS station also reports hourly. Tests were conducted on the Back-Scatter Visibility Sensor (Videograph) at Yellowknife to evaluate the use of the sensor with the MARS II units.

Maintenance technicians carried out the annual overhaul of the Upper Air equipment at the High Arctic Weather Stations and engineering evaluations were made of the Electrolyser Hydrogen Generator equipment at these sites.

Central Services Directorate

The Central Services Directorate (CSD) provided a broad range of consultation on the meteorological aspects of design and operation, and on environmental impact problems, in response to the continuing high level of activity in the Arctic. Work continued on a study of climatic and related factors in the Canadian Arctic Islands and adjacent waters. This study is intended to be a comprehensive reference work designed to meet the needs of a variety of users. Another study, which assessed wind conditions, structural icing and other factors which could affect an offshore drilling operation, was completed as part of the Beaufort Sea Project. A network of fifty special climatological stations was established in the Yukon-District of Mackenzie area. The data collected will be used in assessing the agricultural potential of the area. A meteorological study, designed to support planning for development and usage of Auyuittuq National Park (Baffin Island) was completed. Work was begun on an assessment of variations in climatic and

related factors in the North. The objective of this study is to provide information on significant variations which have occurred in the past, and to provide a basis for monitoring and assessment of future fluctuations. CSD co-ordinated the preparation of a text on snow and provided material for several chapters of the book, which will discuss distribution, physical characteristics, measurement methods, drift control, snow roads, and a variety of other aspects of snow. Although designed to be of use in all areas where snow occurs, the text should be of particular value in relation to activities in the North.

As in previous years, the Ice Branch of Central Services Directorate continued its ice services in support of marine activities in northern waters. Over 2,750 hours of aerial ice reconnaissance, using two chartered Electra aircraft, military Argus aircraft and helicopter flights, were flown. Remote sensors on board the Electras significantly enhanced the visually observed data for tactical support, for ice forecasting purposes, and for climatological archiving of data. Special emphasis was given to the acquisition of remotely sensed ice data in the Beaufort Sea area, and in the central Arctic for Arctic Islands Pipeline Studies. A special ice reconnaissance flight for the latter study was made to Barrow Strait and the Byam Martin Island area in March 1976. Ice observers were assigned to MOT Coast Guard icebreakers for shipboard and helicopter observing and support, as well as for provision of weather observations. These observers spent 695 ship days in the North.

Ice Forecasting Central, Ottawa, continued to provide tactical ice forecasts and long-range outlooks as in previous years. Dissemination of ice forecasts and charts was through normal channels, but considerable difficulty was experienced by ships in copying ice charts relayed by radio facsimile from VFE Edmonton and CFH Halifax. Facsimile relay of ice charts from Ottawa to Frobisher was successfully done via the ANIK satellite, as was telecopier relay of traffic and charts between several Arctic stations and Ottawa. Experiments were successfully completed copying selected picture-

quality LANDSAT and NOAA/VHRR satellite imagery from the Prince Albert Satellite Station in near-real time, for operational forecast purposes. Similar NOAA/VHRR imagery was received from the Satellite Data Laboratory at AES Headquarters. Ice Forecasting Central participated in the Environmental Prediction Service trials in the Beaufort Sea by deploying an ice forecaster to Edmonton during the period of the trials.

An early and extensive clearing of sea ice occurred through the eastern Arctic. Break-up and clearing in the western Arctic was also early, but in August ice returned to the coastal area west of Cape Bathurst and caused late-season difficulties in southern Beaufort Sea. Freeze-up in the eastern Arctic and in Hudson Bay was later than usual.

The Ice Climatological and Applications Division, Ottawa, gradually expanded its operations during the year, including preparation for development of Ice Atlases for Hudson Bay and for the Arctic. Special studies were carried out on the topography of ice in the Beaufort Sea as part of the industry-financed Beaufort Sea Project. Similar studies were done for the Barrow Strait area and Byam Martin Channel area for the Arctic Islands Pipeline Project. A study of observed instances of icebergs and ice island fragments for this area was also completed. Consultation services were provided to many interests, including oil, gas and resource development companies, concerning ice conditions throughout the Arctic which would have an impact on proposed development projects.

Central Services Directorate also continued to provide training in support of forecasting, presentation and data acquisition activities. In particular, the training of radicians for weather observing duties on the DEW Line continued. In addition, the Professional Development Division conducted an Arctic Refresher Workshop in co-operation with Western Region in Edmonton. This program involved both meteorologists and operations technicians, and was designed to provide personnel in Edmonton, Whitehorse, Yellowknife, Resolute and Frobisher with a common understanding and appreciation of essential concepts and operational practices in weather analysis and prediction.

Research Directorate

The Research Directorate continued developmental work in atmospheric modelling applicable to the weather forecasting system with the purpose of improving weather forecasts in all areas of Canada. Both a new data-assimilation scheme and a new operational Canadian model were introduced at the Canadian Meteorological Centre in Montreal. A Computer Prediction Support System (CPSS) was designed for the Beaufort Sea Area, and a prototype tested in the summer of 1975. The procedures are designed so the system can provide hour-by-hour forecasts in the Beaufort Sea area of all standard weather parameters, wave heights, the motion of ice floes, and the movement of the leading edge of pack ice in support of off-shore oil exploration. A model to forecast winds near the earth's surface, taking into account the effects of local topography and local temperature variations, has been tested over Tuktoyaktuk Peninsula and over inshore areas of the Beaufort Sea. Research and development in the area of computer analysis and enhancement of satellite imagery, particularly for application to operations in ice-infested waters, was initiated and has yielded some very useful results. As far as feasible, the products of this work were provided to AES operational components in real time to permit their use in operational programs and to provide the feedback necessary to the R & D program.

An 11-day cloud-seeding experiment was carried out near Yellowknife, to study the feasibility of utilizing rainfall enhancement techniques to suppress large forest fires.

Air quality research studies included air quality observations (turbidity and precipitation chemistry at Fort Simpson; CO₂ at Alert) under the world-wide air quality monitoring program of the World Meteorological Organization.

Plans for 1976-77

Field Services Directorate

The Field Services Directorate will continue all regular observing, communications, forecasting and inspecting programs, including special projects in support of forestry and agrometeorology. There will be a major increase in activities with regard to the CANMAR drilling in the Beaufort Sea including the establishment of a weather office advanced base, probably near Tuktoyaktuk.

Data acquisition facilities and programs will be expanded or improved as indicated below:

High Arctic Weather Stations (HAWS): continuing construction, improvement and rehabilitation at the HAWS.

Hall Beach: relocate the instrument area.

Strathcona Sound: establish a WS4 contract station at the airport to provide aviation and synoptic reports, and provide scientific support for a study of ventilation coefficients at the Nanisivik Mine site.

Rankin Inlet: establish a WS4 contract program of aviation and synoptic reports.

Repulse Bay: establish a WS4 contract program of synoptic reports.

Clyde River: complete the reconstruction and relocation of the Surface Weather Station.

Cape Dorset: re-locate the Weather Station within the new MOT Operations/Terminal building near the airstrip, and integrate the surface observing program with the Community Airport program.

Pangnirtung: establish a surface observing program in conjunction with the Community Airport Program.

Killinek: install a MARS or establish a contract station.

Instrument Branch

Automatic wind-powered meteorological reporting station is planned for installation on the pack-ice in the northwest sector of the Beaufort Sea during the summer of 1976. The testing of the prototype and marshalling of the installation package is nearing completion. The station will provide data in support of the Beaufort Sea Program.

Central Services Directorate

An accelerated program of ice data extraction and preparation for computer processing is planned. This project is supported by the Transportation Development Agency of MOT, and will lead to the early production of a Sea Ice Atlas of the Arctic.

Completion of the climatological of the Arctic Islands is planned. A study of Nahanni National Park, similar to the Auyuittuq Park study, will be completed, and will be editing of the Snow Text.

Following a second year of data collection, an assessment, from a climatological point of view, of the agricultural potential portions of the Yukon and District of Mackenzie will be made.

Based on the study of past variations a program to monitor and assess future fluctuations in significant climatic and climate-related factors in the North will be established.

Research Directorate

It is planned to complete the development and testing of the CPSS for application in the Beaufort Sea. An improved version of the system will be installed for operational support in the summer of 1976 in Edmonton's Arctic Weather Centre. Procedures in the Beaufort Sea real-time total environmental prediction system will be modified for application in an Arctic computerized forecast support system for the entire North. Development of a computer enhancement and analysis system to fully exploit meteorological satellite imagery for operational application to ice and frozen water will continue. These studies will include both imagery and sounding information and will emphasize application of the new TIROS-N satellite series.

Cloud-seeding research along the lines of that conducted near Yellowknife will be continued.

Development of a model to link meteorological parameters with potential air pollution damage to Arctic vegetation will be investigated.

Research on the relationships between meteorological conditions and damage to lichens by sulphur dioxide will be continued.

The water balance and hydrometeorological processes of Baker Creek Basin will be studied.

Long-term Plans

Generally, AES will continue to investigate the Arctic atmospheric environment, its effect on other natural environmental processes and on human activities, and the effect of human activities on the Arctic atmospheric environment.

More particularly, AES will continue to support the extension of the operational and climatological atmospheric data acquisition network in the Arctic, specifically through the utilization of automatic stations. This is essential to improve present knowledge and climatological services in the area. It is also expected that more contract stations, particularly climatological stations, will be operated by native people.

Environmental Protection Service

Responsibilities

To take action in preventing or combating environmental problems that fall within Environment Canada's terms of reference. These activities include problem surveillance, air and water pollution control, solid waste management, control and disposal of environmental contaminants, assistance in controlling activities having an ecological impact, noise control, response to environmental emergencies and management of the Federal Government's own cleanup program.

To develop and enforce environmental regulations, codes, protocols and other protection and control instruments used to implement governmental legislation.

To serve as the point of contact for the public and other government departments with Environment Canada on matters relating to the implementation of environmental protection matters. With regard to the North, the points of contact are located at headquarters in the Ottawa area and the established district offices in Whitehorse and Yellowknife reporting through the regional offices located in Vancouver and Edmonton, respectively.

Air Pollution Control

Responsibilities

Responsibilities under the Clean Air Act are: to control air pollution from federal works, businesses and undertakings in the Northwest Territories and the Yukon; to control air pollution that may be a significant danger to health; and to exercise a leadership role in the national effort to abate air pollution.

Review of 1975-76

Air pollution aspects of a number of activities in the North were studied. These activities included investigations of gold smelting operations in Yellowknife; proposed off-shore oil and gas drilling; waste disposal by incineration, a proposed mining operation at Little Cornwallis Island and a mining operation and power plant under construction at Strathcona Sound, Baffin Island.

A report on an extensive carbon monoxide survey in Whitehorse was initiated. The survey was an expanded version of a preliminary study carried out in the winter of 1973-74. The purpose of the expanded survey was to determine the extent to which carbon monoxide concentrations build up under the influence of winter conditions that reduce the diluting capability of the atmosphere. After the survey was completed a carbon monoxide analyser was installed in a downtown Whitehorse location as part of the National Air Pollution Surveillance Network to monitor year-round ambient levels.

Work was continued on the development of emission regulations for Arctic mining operations. A proposed National Emission Standard for asbestos mining and milling, which will affect asbestos operations in the Yukon, was announced.

Preliminary discussions were held with the Government of the Yukon Territory on guidelines and regulations implementation.

Plans for 1976-77

Several natural gas processing plants planned for the North will be assessed and monitored to ensure that adequate air pollution control measures are included.

Talks will continue with the Government of the Yukon Territory on the matter of implementing guidelines and regulations under the Clean Air Act.

Long-term Plans

These include: the assessment of air pollution aspects of selected activities, an expansion of the National Air Pollution Surveillance Network as required; the continued development of national emission guidelines and regulations applicable in the North; to take action in accordance with the Clean Air Act.

Federal Activities Environmental Control

Responsibilities

To develop a program in consultation with other federal departments, crown corporations and the Territorial Governments for the clean-up of pollution from federal activities and installations, assess environmental problems and recommend annual government-wide priorities to the Treasury Board for allocation of clean-up funds to other departments.

To provide technical service and advice to other departments and, on request, to the governments of the Yukon and the Northwest Territories, and to ensure implementation of remedial measures for environmental problems due to federal government activities and installations.

To ensure that all proposed new federal activities and installations incorporate and maintain adequate provision for environmental protection by developing and instituting systems for assessing and screening projects for potential adverse environmental effects.

To conduct monitoring and surveillance of on-going operations. These include installed environmental protection systems and established practices at federal installations as well as studies of the environmental effects of federal or federally-involved projects.

To co-ordinate the activities of separate missions in assessing the environmental effects of specific resource exploitation and other activities which may have adverse effects on the environment.

To assist and co-operate in the assessment of the environmental effects of the activities of industry and to recommend and implement control actions where appropriate.

To maintain communications with all elements of government and industry to develop codes and guidelines for good practice and, as necessary, regulations.

To establish, where feasible, waste recovery operations to recycle materials from the federal waste stream.

Review of 1975-76

Progress was achieved in the program for environmental clean-up of pollution from federal activities and installations. The sum of \$100,000 was spent in a clean-up of construction debris from the abandoned Canol Road in the Yukon Territory. Assessment studies of pollution problems at federal facilities were carried out at Inuvik and various other Northwest Territories communities. Treasury Board priorities were established for allocation of clean-up funds for 1976-77.

Staff members participated in the appraisal of Beaufort Sea study data and in the development of terms and conditions for the proposed 1976 off-shore drilling activities, as well as in the development of environmental impact statement requirements for the delta gas gathering system and the Polar Gas project. In addition, there was participation in the development of control mechanisms for the proposed Mackenzie Valley Pipeline Project.

There was continuing advice provided to the Arctic Land Use Advisory Committee and the Arctic Waters Oil and Gas Advisory Committee.

Participation with the Government of the Yukon Territory in the purchase of a sewage eductor system and construction of a sewage holding lagoon for the government facilities in Old Crow was another 1975-76 activity.

Other activities included: continued assistance in the development of guidelines for environmental assessment of Haines Road-Alaska Highway relocation; repaving; periodic inspections of Carcross-Skagway and Dempster Highway and land-use activities in the North Slope section of the Yukon; preparation of a plan for Whitehorse to use in renovating their old dump and provision of guidelines for the operation of its new solid waste disposal site; the beginning of an assessment of the Whitehorse General Hospital incinerator; review of and advice on the mosquito control program of the Government of the Yukon Territory.

Assistance was provided in the development of guidelines for environmental assessment of proposed hydro-electric developments and for other projects including oil and gas pipelines, highways and railways and electric transmission lines.

Plans for 1976-77

It is intended to expand the screening and registry of all new federal activities and facilities developments to ensure adequate environmental safeguards are "built" into new installations.

Work will continue in the determination and development of the most suitable waste treatment systems and methods in northern conditions so that these may be applied at federal installations in the continuing effort to minimize or prevent pollution from such installations.

Ecological protection requirements for projects in the North will be assessed and surveillance and monitoring requirements established and implemented in co-operation with other government departments and industry.

Assistance will also be provided to other government departments in the review of proponents' assessments and development of ecological protection requirements for developmental projects and activities such as roads, pipelines, ports, hydro projects and surface mining activities. Development of regulations, guidelines and codes of good practice will proceed as needs are identified. Advice will be given to the Arctic Land Advisory Committee and the Arctic Waters Oil and Gas Advisory Committee. Development of the capability to address non-human environmental aspects of a national energy program will be continued.

Long-term Plans

Long-term plans are to establish the federal Government in a position of leadership in environmental protection by ensuring that all northern federal activities and installations are provided with adequate waste treatment facilities and operated in a manner to exemplify this role, and that they meet all necessary standards, guidelines and codes of good practice. Efforts will be continued to solve the unique environmental problems in the north where there is a federal involvement with special emphasis being directed towards applying new technology to reduce environmental degradation as much as possible.

Participation in environmental appraisal activities as necessary to fulfill the Environmental Protection Service's responsibilities will be continued. The Service must ensure that there is compliance with standards recommended for the protection of the environment and that appraisal of the environmental consequences of any developmental activity in the North is continued. Surveillance and monitoring of various developmental activities in northern Canada will be continued. Appraisal, development and implementation of guidelines, control requirements and surveillance and monitoring of developmental projects and activities, particularly for northern areas will be continued. The service will continue to develop the capability to address the non-human environmental aspects of a national energy program.

Water Pollution Control

Responsibilities

To co-ordinate EPS programs with the Department of Indian and Northern Affairs and two Territorial Water Boards, and ensure the implementation of adequate water pollution control programs in the North, as might be required to meet the objectives of the Canada Water Act and the Fisheries Act.

To implement water pollution abatement programs, including those covered by national effluent regulations.

To stimulate the development and application of water pollution control technology as it relates to the special problems of the North.

Review of 1975-76

Considerable time and effort was devoted by EPS on the Yukon Territory Water Board in organizing the review and consolidation of recommendations from the various DOE Services on Water Use applications.

The Yukon office represented the EPS on a working group who compiled Guidelines for the Development of Water Quality Objectives for the Territorial Waters of the Yukon and Northwest Territories.

Baseline aquatic studies were conducted in the watershed surrounding the Minto copper properties, MacMillan Pass Tugsten property, Arctic Gold and Silver Mines, Venus Mines, Cassiar Asbestos at Clinton Creek, Cyprus-Anvil Mines Ltd., and United Keno Hill Mines Ltd. Studies were also conducted on the Yukon River in the area of Whitehorse and Dawson to evaluate effects of municipal discharges.

Plans for 1976-77

Continued aquatic studies at Cyprus-Anvil Mines Ltd. to evaluate the effectiveness of recently modified treatment systems. Continued municipal discharge studies on the Yukon River near Whitehorse. Additional baseline aquatic studies will be conducted in promising mineral development areas. Continued review and provision of advice to the Yukon Territory Water Board on water use applications.

Long-term Plans

Future plans include the investigation of all waste treatment facilities under construction, completion of the investigation of mines in the Yukon Territory and the beginning of regular monitoring of effluents. Further basin studies on the sources of pollution are being considered, with priority being given to the Great Slave Lake area.

Technology Development

Review of 1975-76

The Northern Technology Development Program was conducted by the regions under Headquarters direction, with the assistance of other Services within EPS included the following projects:

- combined garbage and sewage incineration studies of simulated northern wastes;
- instrumentation of buried pipelines in permafrost areas;
- freeze-thaw sludge dewatering employing natural conditions;
- vacuum sewage collection study;
- laboratory study of concentrated waste disposal in northern areas;
- modelling of a rotating biological contactor; and
- studies on the virus removal efficiency of selected wastewater treatment systems.

Plans for 1976-77

In collaboration with the Northern Technology Centre, participation will be provided in the operation of a rotating biological contactor treating the sewage of Whitehorse.

Long-term Plans

With the increase of industrial activity in the North, particularly with respect to energy and resource development, it is planned to accelerate the Arctic Wastewater Technology Development Program. Projects examining wastewater treatment processes are being considered for industrial sites and offshore locations, as well as population centres.

Environmental Emergencies

Responsibilities

The responsibilities of the Environmental Emergencies service are:

- to integrate contingency planning;
- to co-ordinate the development of environmental emergency technology;
- to advise on measures to prevent environmental emergencies; and
- to ensure that adequate cleanup procedures are undertaken by the polluter, or, where necessary to initiate cleanup.

Review of 1975-76

Environmental Emergencies reported 59 spills of oil and other hazardous materials of which 16 were investigated on site;

- participated in the Northwest Territorial Emergency Control Committee;
- chaired the Beaufort Sea Contingency Planning Task Force to draw up a governmental response to environmental emergencies to complement industrial plans;
- completed sensitivity mapping of the Mackenzie Valley Delta and southern Beaufort Sea;
- developed a reporting and alerting network for environmental emergencies in the North;
- drafted the Yukon Contingency Plan for the cleanup of hazardous substance spills;
- chaired the Environmental Protection Sub-Committee on the Yukon Disaster Committee.

Plans for 1976-77

Environmental Emergencies plans to: review industry plans and integrate these with governmental plans; complete and test contingency plans by the time drilling starts; participate in the development of a joint Canada-USA contingency plan for environmental emergencies in boundary waters in the Beaufort Sea; continue development of technology to cleanup oil spills in the Arctic environment.

Long-term Plans

Continue updating plans and reviewing industrial activities to prevent and combat spills from the exploration, production and transportation of oil. Continue technology development and transfer for oil spill countermeasures in Arctic climates. Maintain and improve the information and control systems to support the planning for and conduct of environmental emergency operations.

Solid Waste Management

Review of 1975-76

Yukon Territory

The Branch assisted the City of Whitehorse and the Territorial Government in the search for a new waste disposal site to serve the City. The new site which is environmentally acceptable would replace an existing site which is encroaching on the Yukon River.

Plans for 1976-77

Northwest Territories

The Branch is in the process of filming waste management activities in the Territories. Information gathered will be combined with information previously obtained to produce a training package which will be readily available to persons working in the Territories who have responsibilities in the waste management area.

The Solid Waste Management Branch, working through the Regional Office, is planning to present at least one seminar on waste management procedures and developments appropriate to the needs and interests of the Territories.

Environmental Management Service

Responsibilities

The Environmental Management Service is responsible for overall co-ordination of work carried out by the Lands, Forests, Wildlife and Inland Waters Directorates. It also deals with environmental assessments and provides general leadership in the management, for continued productivity, of some of Canada's major renewable resources. In general, its responsibilities include: national land use policy and planning initiatives in co-operation with other federal and provincial agencies; land use studies related to use dynamics of the resource; management and operation of a national land data bank; collection and analysis of data for forest policy and program planning; research and development for protection, production, environmental, and amenity forestry; research and development for forest products; international forestry relations; forestry information and technology transfer; migratory bird conservation and protection; wildlife advisory services and information to government and other agencies; wildlife research on toxic chemicals, wildlife pathology, interpretation, information and biometric wildlife research and management in co-operation with provincial and territorial governments; defence of rare and endangered species; assessment of the effect of resource development and other operations on wildlife; initiation of national programs for the planning and implementation of water resources development and water quantity and quality research; development of policies and systems for hydrometric data collection and networks, water and ice inventories and forecasting; and management of regional structures for federal forestry, water and wildlife operations.

Lands Directorate

Responsibilities

to supply and analyse data for land-based renewable resource inventories, regional planning, and the assessment of resource development impacts.

Review of 1975-76

Land Use Planning and Mapping Branch

In conjunction with the Arctic Land Use Research (ALUR) Program of DIAND, the Land Use Information Series maps covering the area around Great Slave Lake were published in the summer of 1975.

The maps, produced at a scale of 1:250,000 (1 inch to 4 miles), integrate a wide range of data on renewable resources and related activities. Each map is complete with a detailed legend. The map series includes current information on: critical and important wildlife areas; fish resources and fishing; recreation and tourism potential and facilities; hunting and trapping areas; notes on communities; development areas and block land transfers; forest, mineral and soil resources; archeological and historical sites; proposed IBP reserves; and parks and sanctuaries.

In early 1975, the series was extended to update 30 previously produced maps relating to the Mackenzie Valley. Information for this project was obtained primarily from the Environmental - Social Program, and the results of extensive research undertaken by pipeline companies and consulting groups. The maps are being compiled and drafted by the Lands Directorate and will be published during the summer of 1976.

Land Use Planning Branch

As part of an ongoing review of existing land use policies and legislation in Canada, the Land Use Planning Branch will be publishing a report on the Northern Territories towards the end of 1976. This report is one of a series of 11 covering each province and the Territories and entitled *Land Use Programs in Canada*. The

paper will discuss potential problems and major concerns of the Territories with regard to land use and land ownership. The role of the territorial and federal departments engaged in land use planning and land management will be outlined and the pertinent legislation examined.

Plans for 1976-77

Most of the above programs will continue in 1976-77. The Land Use Information Series is being extended to cover the area between Great Bear Lake and the Arctic coast, and Banks Island. Publication of these maps is expected in mid-1977.

Long-term Plans

Emphasis will be placed on studies and plans of land resources in co-operation with other agencies and services. It is anticipated that the Land Use Information Series will be extended to include other sensitive areas north of 60°.

Canadian Forestry Service

Responsibilities

To advise and assist the Department of Indian Affairs and Northern Development (DIAND) on forestry operations, practices and staff training;

To participate in the conduct of environmental impact assessments of major industrial developments;

To conduct forest insect and disease surveys;

To prepare forest inventories and maps of forest and other vegetation;

To conduct ecological research in the North;

To compile national statistics on forest stocking, growth and depletion and annual fire losses.

Review of 1975-76

Pacific Forest Research Centre (PFRC)

Specific work undertaken in the Yukon during 1975-76 included a biophysical survey of the Yukon Territory in which the boundaries for 22 eco-regions were established on base maps at a scale of 1:1,000,000 using procedures that involve the application of LANDSAT imagery, aerial inspections and ground sampling.

A report and mosaic describing the climate, vegetation and landforms of the Territory was also produced.

A computer information-retrieval system for forestry data was developed and summaries of timber volume, productive and non-productive land areas are available in metric and yard/pound units for those lands falling between 60 and 64 degrees of north latitude.

Studies were initiated to assess cone-crop production in white spruce (*Picea glauca* (Moench) Voss), its frequency and quality of seed produced. Staff of the Yukon Lands and Forest Service were trained in assessment techniques and are now responsible for monitoring the trials.

Spruce and lodgepole pine (*Pinus contorta* Dougl. var. *latifolia* Engelm.) seedlings were produced in containers at the PFRC and planted out on recently clear-cut areas on the Liard and Meister Rivers northwest of Watson Lake. Seedling growth is being monitored on both scarified and non-scarified growing sites by personnel of the Yukon Lands and Forest Service.

Liaison trips were continued to enable staff from the Canadian Forestry Service to familiarize themselves with Yukon conditions. A number of burned-over areas were visited in order to assess their ability to regenerate and maintain productive capacity.

Routine ground surveys of insect and disease conditions were carried out from the last week of June to mid-July 1975, followed by an aerial survey of forests of the southern Yukon Territory. Only minor defoliator problems were detected. Bark beetles remained quiescent. The incidence of a stem rust on lodgepole pine was apparent. A report *Forest Insect and Disease Conditions Yukon, 1975* was issued to forest managers in the Yukon.

Fire research personnel provided lectures on the topics of fire prevention and fire dispatch to the Yukon Fire Technician Training School. Extensive written and verbal communications on fuel management proposals for settlement protection and on a proposed fire report were conducted with both the Yukon Lands and

Forest Service and the Ottawa Department of Indian Affairs and Northern Development. In the Whitehorse and Watson Lake areas on-the-ground examination of fuels provided a basis for proposing a co-ordinated fire-management approach to settlement protection as an alternative to the proposed fuel modification program. Two aerial ignition systems, complete with aerial-ignition devices, were designed and supplied through contract to the Yukon Lands and Forest Service. Fire weather-index materials and information were supplied as a matter of routine.

Economic advice concerning the need and development of a forest nursery and experimental area was provided through an internal report of DIAND. Other economic advice on forestry problems and development was provided through discussions. No action was taken on development of an economic analysis for fire suppression and prevention.

Northern Forest Research Centre

The Northern Forest Research Centre (NFRC) continued its involvement in the Mackenzie Valley pipeline and transportation corridor area in 1975-76. The Centre provided the chairman for the Environment Canada inter-service "Northwest Region Task Force" which was set up to review Canadian Arctic Gas Study Limited's (CAGSL) proposal to develop a buried natural-gas pipeline. The Task Force completed its report for that part of the proposal north of 60° N, identifying over 30 environmental concerns which it considered would require the specification and implementation of special safeguards were the pipeline to be developed. The report was made available to the Mackenzie Valley Pipeline Inquiry in April 1975, and is catalogued as a formal exhibit for the benefit and use of all participating in the Inquiry.

Since this time the Task Force has been re-organized as a Mackenzie Valley Gas Pipeline Steering Committee and as a Task Force on Mackenzie Valley Pipeline Applications. The Centre has again provided the chairman of the Task Force which has initiated reviews of such documents associated with pipeline development as: the cross-Mackenzie Delta route modification; the Foothills' proposal; and the United States' Environmental Impact Statement for the Canadian portion of the Arctic Gas proposal. Continuing review commitments of this nature are expected in the light of further possible changes to industry's proposals.

In fulfillment of Environment Canada's policy of providing all possible assistance to the Mackenzie Valley Pipeline Inquiry, a number of departmental scientists from different services have contributed to the formal hearings of the Inquiry. To date, the Forestry Service has made available the Chairman of the Task Force, recognizing his specialist knowledge in the area of terrain-vegetation relationships.

As part of the departmental program of base studies in the Arctic Island - Polar Gas Project, the Centre initiated field work in the terrain mapping and performance area (TEP 1 and 3). Such work is expected to provide background understanding of landform-vegetation-permafrost relationships in preparation for a review of industry's expected proposals to develop pipelines from the Arctic Islands to points in southern Canada. An associated contribution of the Centre's staff has been the preparation of guidelines for such proposals through the Polar Gas Project Guidelines Task Force.

In forest-fire research, detection plans were completed for Wood Buffalo National Park and the Northwest Territories. These were based on field reconnaissance and office implementation. In the Yellowknife Region, an on-site evaluation was carried out on the effectiveness of airtanker retardants. In the Mackenzie transportation corridor an extensive field reconnaissance was conducted in an attempt to correlate components of the fire-danger rating system with actual fire behavior and its effects on the environment. The fire liaison program was continued by applying danger ratings and fire behavior experience.

Forest Management Institute

Co-operation with Parks Canada, including the provision of basic data on the land-vegetation relationship in selected national parks across Canada, continued. Within this program work is proceeding on the Nahanni National Park (4,836 km²) in the Northwest Territories.

Plans for 1976-77

Pacific Forest Research Centre

An investigation of the Liard River eco-region will be initiated in 1976. Basic to this study is an examination of the vegetation-permafrost-landform interactions. Additional work will be undertaken using LANDSAT imagery and supervised classification systems to differentiate vegetation types and to assist in establishing the productive capacity of the area. The information retrieval system will be expanded to cover all Yukon lands and the eco-region boundaries will be incorporated into the system. Studies will be initiated to incorporate forest-loss statistics into the forestry file.

Planting and seeding trials will continue with additional liaison trips into the southwestern portions of the Yukon Territory.

The forest insect and disease survey will continue in June and July 1976, with emphasis on the establishment of permanent sample stations for defoliators. Wood borers in decked logs will receive particular attention. Aerial surveys and photography of pest-damaged stands will be increased.

PFRC fire research will continue in a responsive advisory service role to the Yukon in 1976-77. Training and lecturing services concerned with fire-danger rating, meteorological influences, and fuels management will be provided to Yukon Lands and Forest Service personnel. Fire research personnel will continue consultative and advisory services to the settlement protection program and

will propose a strong co-operatively developed, but self-implemented plan of management for Yukon settlements. A co-operative training program of suppression burning will be implemented using the aerial ignition systems provided in 1975.

Economic advice and services concerning forestry development will be available as requested.

Northern Forest Research Centre

With respect to the Mackenzie Valley transportation corridor, the Centre expects to continue to contribute specialist knowledge in the terrain-vegetation area of the Mackenzie Valley Pipeline and National Energy Board inquiries.

For the Arctic Islands Pipeline Program and the Polar Gas Project, contributions in both field studies and Task Force activities are expected to continue in the light of the interest in this more easterly pipeline possibility.

Forest-fire research services will be maintained.

Forest Management Institute

The Nahanni Park study will be continued during 1976, and will encompass additional field work and mapping at a scale of 1:50,000.

Canadian Wildlife Service

Responsibilities

To conduct research, management and administration of migratory birds under the Migratory Birds Convention Act and the Canada Wildlife Act; to co-ordinate federal, provincial and territorial action on common wildlife problems;

To conduct surveys and inventories of wildlife resources; to recommend management procedures for particular species of economic or aesthetic importance; to undertake or to sponsor research on wildlife species in relation to their habitat;

To collect and analyse animal population and utilization data;

To study wildlife diseases and the effects of toxic chemicals on wildlife or their habitat.

Review of 1975-76

Work undertaken in the North in 1975 included investigations of: big game species of the Yukon and Northwest Territories; wildlife and wildlife habitat located on potential energy corridors in the Western and High Arctic; the biota of areas subject to the increased tempo of petroleum exploration; wildlife in the new northern national parks; and the endangered raptors and the recreationally and aesthetically valuable waterfowl resources, principally of geese.

Mammalogy Projects

Studies of muskox and Peary caribou movements on Melville Island and adjacent islands continued, using radio-tracking gear on muskoxen and spray painting on Peary caribou. At the same time, samples for pathological studies were taken. Although some inter-movement has been postulated, the total numbers of Peary caribou compared with a 1961 baseline have declined drastically and recruitment appears to be nearly zero.

Polar bear studies including the capturing, tagging and releasing of bears were conducted in the Central Arctic Islands and in the vicinity of the Boothia Peninsula. Seal specimens were collected from polar bear kills; seal populations – the major food source for the polar bear in the Arctic – were studied as well.

A study of the Bluenose herd of barren-ground caribou in 1975-76 included obtaining valuable movement data which will relate to proposed pipeline corridors as well as to utilization by various groups of Indian hunters.

Bison were vaccinated against anthrax at Hook Lake, NWT, by Canadian Wildlife Service pathologists.

Environmental Studies Projects

Field studies were carried out on polar bear, grizzly bear and seal population relationships; and the movements of the Bluenose herd of barren-ground caribou were observed.

Studies of migratory bird – use of coastal waters in the Western Arctic and the Mackenzie River continued, and endangered raptor breeding sites were mapped and studied.

Samples of water, mussels and birds were taken on the site of a proposed lead/zinc mine near Strathcona Sound, NWT, in order to obtain background levels of heavy metals before mining activities.

Surveys and inventories of natural resources of national parks in the Yukon Territory and the Northwest Territories were carried out on behalf of the National Parks Branch of the Department of Indian Affairs and Northern Development.

Ornithology Projects

Several major studies of snow geese were concluded and results published. One of the most notable was a complete census by high level photography of all eastern arctic snow goose colonies.

A project to map the flora and fauna of the Beaufort Sea coastal tundra was continued.

Studies of the biology and distribution of Brant, White-fronted Geese, Glaucous Gulls, and Whistling Swans continued.

Whooping Crane nesting surveys continued and eggs were again collected, and transported to Gray's Lake, Idaho, where they were placed under wild Greater Sandhill Cranes. A total of six young were recovered and migrated to wintering areas in New Mexico. This project will continue for five years.

A census of Lesser Snow Geese nesting around Hudson Bay, on Southampton Island and on western Baffin Island was completed and published. The census, giving total nesting pairs, total nesting area, and colour ratio for each of the 16 colonies, was based on vertical aerial photographs obtained in June 1973.

Contracted studies on the nesting biology, behaviour, and genetics of Lesser Snow Geese continued at LaPerouse Bay, near Churchill, Manitoba.

Investigations of the distribution of sea ducks, Brant, and snow geese, including banding of the latter two species, continued in the Queen Elizabeth Islands.

A spring reconnaissance survey of shorebirds was made in the vicinity of Alert on Ellesmere Island followed by a large-scale banding operation on the east coast of James Bay.

Several oceanographic surveys of seabirds were made off west Greenland and in the eastern Canadian Arctic. Population analysis from photography was continued for several major eastern Arctic seabird colonies. An atlas showing the breeding and pelagic distributions of seabirds in eastern Canada and west Greenland was published by the CWS.

Plans for 1976-77

Mammalogy Projects

Further work on Peary caribou numbers and productivity in the Queen Elizabeth Islands will continue in order to develop a chronology of events leading to the decline in Peary caribou numbers. A study of human disturbance and harassment of Peary caribou will be included in order to determine if oil and gas activities are detrimental to caribou.

Further studies will include an evaluation of wildlife populations and habitat on Prince of Wales and Somerset Islands and the Boothia Peninsula in relation to a proposed Eastern Arctic Pipeline Corridor.

The polar bear studies will continue on a broad front across the Arctic Archipelago including inventory and monitoring of two critical areas relating to two potential major development areas: the Banks Island to Northern Yukon axis; and the Bathurst Island to Boothia Peninsula axis. Major denning areas will be outlined and steps taken to protect them in accordance with Canada's obligations under the terms of the International Agreement for the Conservation of Polar Bears.

Studies of the Bluenose herd of barren-ground caribou will conclude in 1976-77. Final goals will be provision of information on the biology of the population and management recommendations.

A vaccination program to protect bison against anthrax is planned for the summer of 1976.

Ornithology Projects

The census of seabird colonies will be extended to Lancaster Sound.

Radar studies of migrating birds in the Beaufort Sea will be done in May and June. Ground and aircraft observations will check the radar observations.

Work on the population biology of the Brant and Whistling Swans will be intensified.

Studies of the distribution of shorebirds and the factors affecting them will continue.

Flora and fauna mapping (1:50,000) of the western Arctic tundra will be completed.

An intensive five-year banding program for White-fronted Geese, Ross Geese, Brant and Mallard Ducks will begin.

Studies on the distribution and habitat preferences of snow geese, Canada Geese and Brant will be conducted in the Foxe Basin and Southampton Island area.

Contracted studies on Lesser Snow Geese will include continuation of the investigations of nesting biology, behaviour and genetics at La Perouse Bay and initiation of a study of egg size variation and energy reserves.

The classification of bird habitats made by the recent Integrated Landscape Survey on eastern Melville Island will be checked by studying nesting birds at selected areas.

Reconnaissance and banding of shorebirds in spring on northern Ellesmere Island will continue.

A multi-species study of the reproductive ecology of seabirds breeding on Prince Leopold Island will be continued. Additional investigations of seabirds will be conducted on Devon and Baffin islands and in northern Ungava.

Environmental Studies

Surveys of new national parks in the Northwest Territories and Yukon will be continued in conjunction with the National and Historic Parks Branch, Indian Affairs and Northern Development.

Important species of wildlife likely to be affected by the Liard Highway will be studied in 1976. The distribution and behaviour of Peregrine Falcons near the areas of construction activity will be part of this study program, while studies of waterfowl and their habitats will round out the ornithological activities. Mammalogists will make observations of moose movements and migrations.

Eastern Arctic seabird colonies of such species as Fulmars, Murres and Kittiwakes will be studied along with their food sources.

Long-term Plans

To continue studies of major wildlife resources;

To increase studies of impact on wildlife and its habitat of development of natural resources, transportation corridors and new and existing industrial processes;

To develop management plans for important northern species of wildlife, such as caribou;

To increase efforts to identify and preserve natural ecosystems;

To assess the effects of increasing human use, both consumptive and non-consumptive, on wildlife resources and their habitats and to study the social values of wildlife resources.

Inland Waters Directorate

Responsibilities

To plan and participate in national and international programs of water management, with the objective of providing Canadians with maximum economic and social benefits, giving full consideration to environmental concerns. Program areas include:

- boundary waters activities;
- planning and implementation of plans for river basins, coastal zones and shorelines;
- setting of water quality objectives;
- flood damage reduction;

water aspects of environmental impact; regulation and interjurisdictional allocation of water; forecasting of water supply and demand; research and monitoring of water quality, water quantity and sediments; socio-economic water research; scientific and technical water information; and public information on water and water-related matters.

Water Resources Branch

Geology Division

Responsibilities

To establish a federal research centre to provide leadership in the study of glaciology; to develop new concepts on the hydrologic processes in the North; to study the structure and physical properties of snow and ice and their relationships with the environment and to develop computerized data storage and retrieval systems pertaining to glaciers for federal, provincial and territorial water resources agencies, educational institutions and industrial concerns.

Review of 1975-76

The first phase of the glacier inventory of the Canadian St. Elias Range has been completed under contract with the Arctic Institute of North America. A total of 3468 glaciers have been identified in the Ozadeash, Alek, Tatshenshini and Dnijk river basins. The bibliography for this region contains almost 600 items. Seventeen glacier inventory maps covering 80 per cent of the basins on Ellesmere Island are in the final stages of preparation; only the area north of Gely Fiord/Lake Hazen remains. With Polar Continental Shelf Project support, 110 air-photo hours were flown over the Mackenzie River and Queen-Elizabeth Islands. Break-up was studied along the lower Liard and Mackenzie Rivers and excellent coverage obtained of ice jams. Glaciers on Ellesmere and Ahl Heiberg Islands were photographed, as well as niche glaciers and semi-permanent snow patches near Simmonds Bay.

Leffert and d'Iberville glaciers, with discharges of $7 \times 10^6 \text{ m}^3/\text{s}$ and $1.5 \times 10^6 \text{ m}^3/\text{s}$ respectively, are being used to study calving processes and ice/sea water interaction. Terminal ice thicknesses are in the order of 60-100 m.

On the Barnes Ice Cap, Baffin Island, 35 stakes, 300-1000 m apart, on a 25 km flow line in the surge portion of the South Dome, were resurveyed. Temperature measurements revealed that near the margin the basal ice temperature is about 1°C lower than pressure melting but in the deepest hole (200 m and 20 m short of bedrock) it is at pressure melting. Mass balance measurements are being continued along this and the northern lines.

On Mount Logan, control points were established around the northwest col for a 1:10,000 scale map and as a reference for movement and strain measurements. A 15.8 m snow/firn core is being analysed for tritium and O^{18} . The 10 m temperature of -28.9°C corroborates stratigraphic evidence that the site is within the dry snow facies; recent accumulation rates are 1.3-1.5 m/a of snow. Radio echo sounding at 620 MHz yielded a probable snow/firn depth of 120 m at the Arctic Institute camp, 700 m from the col. Evaluation of the site for a 1977 drilling operation continues.

Hydrological reconnaissance surveys were carried out in the Thomsen River Basin, Banks Island, and on Somerset Island and Boothia Peninsula. Snow cover distribution and seasonal snowline retreat were examined for Somerset and Boothia as part of the Arctic Islands Pipeline Project studies.

At d'Iberville Fiord, Ellesmere Island, observations were made on two small watersheds to determine snowmelt runoff characteristics as well as soil moisture and heat budget parameters. In south-central Ellesmere Island, hydrological investigations along the ice cap margin were again carried out under contract with the Department of Geography, McMaster University. The objective under the contract is to define hydrologic and sediment regimes of two rivers considered typical of ice margin drainage paleoclimatic techniques.

At Resolute, on Cornwallis Island, field testing of a nuclear-powered (Cobalt 60) recording weather station was completed.

In the Mackenzie Valley, hydrology studies continued to emphasize problems relating to highway and pipeline construction. The ice regimes of major rivers and culvert design considerations were given particular attention, but lake and ground temperatures were also measured at selected sites.

A field study of the attenuation of solar radiation (300-1000 nanometres, billionths of a metre) by the snow and ice cover of the Beaufort Sea has been completed. Work is continuing on lakes in the vicinity of Inuvik. Laboratory studies on the absorption and scattering processes of visible radiation in ice and snow are being conducted using classical laser light scattering, laser Raman spectroscopy and transmission spectrophotometry.

Plans for 1976-77

Many of the studies carried out in 1975-76 will be continued, some in a modified form. For example, in the Mackenzie Valley, extreme hydrologic events in small watersheds crossed by the Mackenzie Highway will continue to be monitored but the emphasis during spring break-up will shift to proposed bridge crossing sites on major rivers.

At Cape Parry, NWT, a small bay exposed to an experimental oil spill in the winter of 1974-75 is to be examined in the spring of 1976 to observe any long-term biological consequences reflected in the ice biota.

New activities will include aerial and ground examination of spring break-up on river stretches, between 60°N . Lat. and Spence Bay, crossed by proposed pipeline routes from the Arctic Islands. In addition, some aspects of the physical limnology of representative lakes along the pipeline route will be studied. Lakes near Resolute, NWT, will be photographed in the spring to obtain spectral information from the ice cover deterioration.

In the summer of 1977, a major investigation into the climatic history of the Mount Logan area will be initiated with the analysis of deep ice cores and using other appropriate paleoclimatic techniques.

Long-term Plans

To improve our understanding of the behaviour of large ice masses; to obtain long ice cores from large glaciers and analyse these as a means of obtaining data on environmental change; to complete a map series of all calving glaciers with estimates of the rate of ice discharge from each; and to develop a project that focuses on the hydrologic regime of basins in environments characterized by permafrost, low temperatures and extensive periods of snow cover. Special attention will be given to the hydrologic implications of resource development.

Applied Hydrology Division

Responsibilities

The main responsibility of the Applied Hydrology Division is to provide technical support for the operation of the Water Survey of Canada and includes the following functions:

- development of techniques, instrumentation and standards for the collection of streamflow, water level and sediment data;
- development of techniques, instrumentation and standards, including computer programming for office procedures in handling the data and publication of the resultant records;
- conduct of network planning and flow forecasting studies;
- conduct of special purpose or non-routine field survey including discharge measurements of large rivers, survey of sediment deposition in reservoirs, photogrammetric surveys of glaciers and morphological surveys and studies of river channels, basins and estuaries;
- the operation of a sediment analysis laboratory for both production and experimental purposes.

Review of 1975-76

The annual publication of stream discharges and lake levels in the Yukon Territory and NWT for the year ending December 31, 1974 was distributed in October 1975. The information is also available on magnetic tape for computer use. An index of all streamflow and water level stations in Canada was published. A publication of historical streamflow data was distributed in March 1975 and includes a summary of monthly and annual mean discharges, annual maximum instantaneous discharges and maximum and minimum daily discharges for the entire period of record to 1973.

The annual sediment data publications listing records of mean daily sediment loads for many streams across Canada, including some in the Territories, were produced for the year 1971 in June 1975, and for the 1972 data year in January 1976. An index of all sediment stations in Canada to 1972 was published in February 1976.

Data Collection Platforms (DCPs) which transmit water levels and a variety of other data, such as temperature and recorder performance, to the LANDSAT 2 polar-orbiting satellite, have been operating with very high reliability since July 1972. There are six DCPs in the Northwest Territories, five in the Mackenzie Valley and one on the Kazan River. Other DCPs are located in the northern parts of the Prairie Provinces.

Plans for 1976-77

Additional satellite Data Collection Platforms (DCPs) will be installed and operated by Water Survey of Canada personnel in 1976. Studies for a Canadian Satellite Telemetry System that would meet DOE requirements are now being conducted.

More work will be carried out on a program for determining the procedures for measurement of winter flows on arctic rivers.

In general, the Applied Hydrology Division is becoming more dependent upon regional funding for activities in the regions. Implementation of the plan to convert to metric units of measurement is underway.

Long-term Plans

To continue experimentation and studies to further enhance the effectiveness of the Water Survey of Canada.

Hydrology Research Division

Responsibilities

To conduct federal research programs in hydrology with emphasis on the development of hydrologic techniques, methodologies and instrumentation for water resource evaluation;

To identify those operational areas in the water resource field where there are needs for research and to implement appropriate research projects and programs to meet these needs;

To develop and improve hydrologic models and to establish firm objective criteria for assessment of their reliability;

To gain a better understanding of hydrologic processes and interactions in order to place hydrologic modelling on a more deterministic basis.

Review of 1975-76

Detailed hydrochemical and isotope studies were made at selected ground water discharge sites between Willow Lake River and Gibson Pass, Mackenzie Valley. Two modified electrical-resistance frost gauges and two visual frost gauges were installed for further testing in Calgary. Development of a multichannel system for measurement and recording of ground water parameters was started in the fall of 1975. A contract study was sponsored to make a computer simulation of ground water and thermal regime in an Arctic permafrost streambed environment and the effect of a chilled pipeline on this regime. A second contract involved a laboratory investigation of the movement of moisture through frozen soil.

Plans for 1976-77

There will be a study of annually developing frost and icing mounds at Bear River Spring site near Fort Norman. The ground water recharge in the 'Karst' area between Mahony Lake and Great Bear Lake will be investigated. The multichannel measuring and recording system will be further developed.

A drilling program will be carried out near Rea Point on Melville Island, NWT, to investigate permafrost conditions beneath streams in an Arctic environment. Thermistor cables will be installed into shallow holes in streambeds to measure the seasonal changes in subchannel temperature. Procedures will be developed for performing such measurements on "flashy" Arctic streams which freeze to the bottom in winter.

Long-term Plans

continuing commitment to investigate northern hydrologic and hydrogeologic problems is envisaged. Two important specific aims are: to gain an improved understanding of the factors controlling the occurrence and movement of ground water in permafrost areas and the interaction between ground water and permafrost; and to be able to predict the potential modification of ground water occurrence and movement by resource development activities, as well as the possible undesirable environmental consequences thereof.

Water Survey of Canada Division

Responsibilities

The Water Survey of Canada (WSC) is primarily responsible for the collection, computation, and publication of surface water data for most of Canada. WSC works in co-operation with provincial governments and with other departments of the Federal Government. Besides operating a network of hydrometric gauging stations, WSC co-operates with other sections of the Inland Waters Directorate in the collection of water samples for quality analysis and in the operation of observation wells for groundwater studies. It also constructs, operates and maintains water-level recording stations to provide information on tides and water levels for the Hydrography Branch of Ocean and Aquatic Sciences. The Water Survey of Canada operates laboratories for suspended sediment and bedload samples.

Review of 1975-76

This was the first year of operation under a co-operative program between the Department of the Environment and the Department of Indian Affairs and Northern Development. Co-ordinating committees were established for both the Yukon and Northwest Territories, to plan and direct water quantity survey activities.

Ninety-six hydrometric gauging stations were operated in the Northwest Territories and 44 in the Yukon Territory; total water levels were recorded at an additional 15 stations. Sediment observations were made at 13 sites in the Northwest Territories and six sites in the Yukon. Snow surveys were made for the fourteenth year at 10 locations to assist in the prediction of snowmelt runoff in the Taltson and Nahanni river basins.

In co-operation with the Frozen Sea Research Group, a program was continued to collect surface water data from d'Iberville Fiord area of Ellesmere Island. In the Northwest Territories, WSC constructed eight permanent gauging stations for investigations for the Arctic Island Pipelines. Three permanent gauging stations were constructed in the Yukon Territory.

The forecasting service for main-stem Mackenzie River levels was continued. Data communications were further improved through greater use of LANDSAT satellite retransmission and telephone linkage.

A program to determine the distribution of flow and sediment in the Mackenzie Delta was continued as part of the Beaufort Sea studies.

Plans for 1976-77

Planning and operation of water quantity surveys in the Yukon and Northwest Territories will continue, guided by the co-ordinating committees established under the agreement between DOE and DIAND. The Water Survey of Canada will carry out the field activities and the publication of data. Thirteen additional streamflow stations will be constructed in the Northwest Territories and in the Yukon.

Although investigations in the Mackenzie Delta, sponsored by the Beaufort Sea program, were concluded

in 1975-76, a limited in-house program is planned to improve the knowledge of flow distribution in the Delta.

Hydrologic regime investigations will be continued along the prepared route of the Arctic Island Pipeline with emphasis on one site-intensive investigation and the Keewatin reconnaissance including a snowmelt and river ice study.

The tidal gauge network and water-level forecasting program will be continued.

Long-term Plans

Plans for further development of water quantity and related networks in the Territories are the responsibility of the co-ordinating committees. These committees will carry on a continuing review of the value of the existing networks and develop plans to meet the needs of proposed projects and to provide an inventory of northern water resources. New methods of obtaining data will continue to be explored to improve efficiency and reduce the high costs associated with travel by air. The Water Survey of Canada will continue to operate the tidal gauges in co-operation with the Hydrographic Branch of Ocean and Aquatic Sciences. The water-level forecast program will be continued and improved. Sampling for water quality analysis will be continued.

Water Quality Branch

Responsibilities

The water Quality Branch is responsible for the collection, analysis, interpretation and dissemination of water quality data in support of federal and federal-provincial programs across Canada. Baseline water quality data is obtained from specific reference points across Canada and is augmented by detailed information and data collection in comprehensive surveys that are undertaken in response to specific water use requirements or environmental impact assessments.

Review of 1975-76

The Branch provides direct support for federal programs relating to National Parks and to data collection and surveys in the Yukon and Northwest Territories in collaboration with the Department of Indian Affairs and Northern Development. A collaborative arrangement for laboratory services is in place at Yellowknife in which the Branch participates directly in the analysis of samples collected in the Territories under the Department of Indian Affairs and Northern Development program. This Branch activity is administered as a detachment of the Inland Waters Directorate laboratory at Calgary in the Western and Northern Region.

Long-term Plans

The Branch will continue to operate in northern joint basin studies with the Department of Indian Affairs and Northern Development and with other water-oriented services in the Department of the Environment. Considerable work has been done toward developing water quality objectives for the Northwest Territories and the Yukon. These will be used in deciding what effluent standards are required.

Water Planning and Management Branch

Responsibilities

To develop comprehensive water resource studies and water management programs;

To provide an advisory service to the Government of the Northwest Territories and the Yukon on water planning and management matters;

To participate in environmental assessments of development projects, in particular the water management aspects.

Review of 1975-76

The Branch continued to participate in the review of water management aspects of projects which come under the Environmental Assessment and Review Process (EARP). Such northern activities as oil and gas pipelines, road construction, hydro dams, mining developments, an Arctic medium-draft terminal, and artificial islands in the Beaufort Sea came under assessment.

The Branch continued to provide the Secretariat for the Mackenzie Basin Intergovernmental Liaison Committee and its two Task Forces. The Task Forces on Information, established by the Committee in 1973, has been disbanded after having completed the Mackenzie River Basin Reference Binder. Work on hydrologic modelling of the Mackenzie River system continues. The Ad Hoc Task Force set up in August 1975 to examine potential interjurisdictional water resource issues and to recommend institutional arrangements for work requirements, was also disbanded after it presented its report on February 11, 1976.

Plans for 1976-77

The Branch will continue to participate in the review of projects which come under EARP. Mackenzie Basin Intergovernmental Liaison Committee members have agreed in principle to work towards a formalized agreement. A new Task Force (the Task Force on Program Development) has been struck to develop a proposed intergovernmental agreement for consideration by the Liaison Committee with an addendum for an initial cost-sharing Canada Water Act study to be started in 1977-78. The Branch will perform the lead function for this new Task Force.

Long-term Plans

The Branch will continue to participate in EARP; co-operate in the development of water management programs including the new Flood Damage Reduction Program; take part in river basin planning with consultative committees employing the Canada Water Act; carry out impact studies as a result of diversions of water; and work towards a permanent management arrangement for Mackenzie Basin waters.

Fisheries and Marine Service

Responsibilities

The Fisheries and Marine Service has overall responsibility for fisheries research and operations throughout Canada and for the implementation of oceanographic and hydrographic programs of the Federal Government. Specific responsibilities in the North concern the maintenance and development of fish and marine mammal stocks and assessment of the impact of future development of these stocks; upgrading commercial fishing practices and carrying out physical and chemical studies of processing plants; assessing inventories and characteristics of angling stocks and monitoring recreational fishing activities; and carrying out physical and chemical studies of the Arctic marine on such matters as tidal characteristics, wave regimes, pollutants and the properties and distribution of ice. Continuing activities also include hydrographic and resource studies of northern waters and the publication and maintenance of up-to-date nautical charts, tide tables, etc. of the region.

Arctic Biological Station – Ste. Anne de Bellevue, Que.

Responsibilities

Biological investigation of the marine environment in Canada's North, especially the distribution and abundance of marine mammals and fishes, and the ecological factors that control production.

Review of 1975-76

Marine Mammals

In co-operation with the Canadian Wildlife Service, detailed studies were continued on the breeding habitat of the ringed seal in Prince Albert Sound, Victoria Island. Similar studies were also carried out in Barrow Strait as part of the Arctic Islands Pipeline Program. These were followed by aerial surveys in the same area later in the spring in order



Measuring narwhal specimen at Koluktoot Bay, northern Baffin Island, during a three-year study of this single-tusked aquatic mammal

quantify the density and distribution of moulting seals basking on the ice. At Brown's Harbour near Cape Parry an experiment was carried out to assess the effect of a seismic blast on captive ringed seals. Further studies were made of bioenergetics and the biochemical effects of stress.

In the Mackenzie area, survey flights were made to determine the distribution of white whales in relation to Inuit hunting camps and oil drilling rigs and support vessels. Further observations were collected on the distribution of bowhead whales in the western and eastern arctic. At Arctic Bay and Pond Inlet in northern Baffin 62 and 65 narwhals were sampled from the proceeds of the Inuit catch and observations on behaviour were made.

Biological Oceanography

Studies were continued on the marine ecology of the Eskimo Lakes, east of Tuktoyaktuk Peninsula, while detailed microbiological and physiological experiments were carried out at the Government laboratory at Inuvik. Participation in the Beaufort Sea Project included two cruises on *M.V. Pandora*, two on *M.V. Salvelinus* and the occupation of several oceanographic stations from the sea-ice by helicopter.

Marine Fishes

As part of the Beaufort Sea Program, particular attention was paid to the shallow water lagoons along the west coast of Tuktoyaktuk Peninsula and on northern Richards Island as possible intensive feeding areas of marine and anadromous fishes. Samples of pelagic

larval fishes were obtained from *M.V. Theta* as far out from land as the ice edge permitted.

In James Bay, under the hydroelectric development program, a third season was devoted to the study of marine and anadromous fishes in the estuaries of the Eastmain and La Grande rivers.

Plans for 1976-77

Further studies on the distribution and density of breeding and moulting ringed seals will be carried out in the area of the proposed gas pipeline crossing Barrow Strait. A long-term project on the migration of ringed seals, by marking animals caught in nets, will be continued at Brown's Harbour and Cape Barry, and a number of live seals will be transported to the University of Guelph for further studies on bioenergetics.

A study on behaviour and feeding of walrus at Coats Island in northern Hudson Bay will be initiated.

The catch of narwhals taken by Inuit hunters at Arctic Bay and Pond Inlet will be sampled in a final year's study of the biology of this species.

Additional information on the distribution and abundance of anadromous and marine fishes in the southeastern Beaufort Sea will be collected.

Physiological studies on marine bacteria and several important crustaceans will be continued at the research laboratory at Inuvik. Some phytoplankton collections will be made at Frobisher Bay and collections of bottom-living invertebrates will be made from *M.V. Calanus* at Coats Island in conjunction with the walrus study.

Long-term Plans

Biological assessment of fisheries resources will be continued to provide information for the management of fish and marine mammal stocks. Emphasis will be on population studies, but physiological studies will attempt to relate these animals more closely to their environment, and to the effects of disturbance by man. Marine productivity studies will be continued in order to provide a basis for assessment of possible environmental changes caused by exploitation of non-renewable resources such as oil and gas.

Freshwater Institute – Winnipeg, Manitoba

Fisheries Resources

Review of 1975–76

Research activities centered around a detailed study of Arctic char in the Nauyuk Lake area on the Kent Peninsula, NWT. The objective of this study is to provide details on the population dynamics, production capacity and life history of this species which is important in the domestic sports and commercial fisheries of the Territories. The information obtained is of prime importance in the planning of new strategies and improved management techniques. As part of the program a large number of char were tagged on their seaward migration in June and again on their return from the sea in August and early September. Tagging and tag recoveries were facilitated by use of a counting fence. Analysis of the population structure is currently being carried out.

Fisheries Management activities included a creel census and sampling program on the sports fisheries of Great Bear and Great Slave lakes, which was conducted with the objective of determining the results of reduced catch and possession limits imposed during 1974 in terms of harvest and also to determine the general population dynamics of pertinent game fish species in order to assess the effects of the sports fishery. Sports fishery assessment also included monitoring and sampling the Arctic char fisheries at Tree River and Albert Edward Bay on Victoria Island. Commercial fisheries work included monitoring of the fisheries on Great Slave Lake, at Cambridge Bay, Pelly Bay, Nettilling Lake and along the Keewatin Coast. An assessment of the anadromous Arctic char population along the Keewatin Coast using counting fences and tagging techniques were also continued in order to gain the biological information necessary to set quotas for the commercial fishery in that area.

This information is also complementary to the research work being conducted on the Kent Peninsula. A preliminary assessment of the domestic fisheries along the south shore of Great Slave Lake was initiated and studies were conducted in the Strathcona Sound area to provide baseline information on marine mammals in the area prior to mine development.

Long-term Plans

The project on arctic char on the Kent Peninsula will be continued. Improved management techniques for northern fish stocks, particularly whitefish, lake trout and arctic char will be developed. Methods to assess proposed and ongoing fisheries, both commercial and sports, to ensure optimum harvest, will be developed.

Environmental Impact Section

Review of 1975–76

Plans for construction and alignment along the Mackenzie and Liard highways were reviewed and specifications developed for stream crossings to ensure protection of the fishery resource. Prototype baffles were designed and constructed in the culverts of the Redknife River highway crossing near Fort Simpson, to determine their effectiveness in controlling water flow velocities and enabling fish passage. Field evaluation of completed highway sections were conducted to ensure conformity with proposed plans. Surveys were conducted to evaluate the fishery resources along the proposed Inuvik-Tuktoyaktuk Highway alignment. A program was initiated on three streams crossed by the Mackenzie Highway to monitor the impact on the aquatic environment during and after crossing construction.

Assessments of gas pipeline proposals continued and contributions were made to the Mackenzie Valley Pipeline Inquiry. An inventory of fishery resources in the areas of proposed Mackenzie Delta gas plant developments was completed. An inventory of the aquatic resources within the region of the proposed Arctic Islands Pipeline was initiated. Fishery resource studies in the outer Mackenzie Delta were completed and reports submitted to the Beaufort Sea Project. A preliminary assessment was made of proposed plans for the dredging of the Mackenzie River.

The land use survey of the fish resources of the NWT was continued.

Fishery resource studies were conducted in relation to NCPC hydro development plans for Lac la Martre.

Monitoring studies of the fish, marine mammal and aquatic invertebrate resources in the Strathcona Sound-Admiral Inlet area were undertaken with the objective of monitoring impact resulting from the development of Nanisivik Mine.

General survey information was collected in the vicinity of the Arvik Mine, Little Cornwallis Island.

Plans for 1976–77

Plans for construction and alignment of the Mackenzie, Liard and Inuvik-Tuktoyaktuk highways will continue to be reviewed and construction activities monitored. The prototype baffles in the Redknife River culvert crossing will be assessed to determine hydrological effects and whether fish migration past the structure is successful. The Mackenzie Highway Monitoring Program at three stream crossings will continue. An inventory of fishery resources along the proposed alignment of the Liard Highway is planned.

Fishery resource studies related to NCPC hydro development plans on Indian Lake will be initiated.

Monitoring and control of Beaufort Sea oil and gas activities will continue. Experimental studies and resource inventories related to construction of the proposed Arctic Islands Pipeline will be conducted at Stanwell-Fletcher Lake. The assessment of fishery resources along the proposed route of the Arctic Islands Pipeline will continue. Plans for gas plant installation in the Mackenzie Delta will be reviewed and monitored.

The land use survey in the NWT will continue.

The environmental monitoring program at Nanisivik Mine will continue.

Baseline information on fish, marine mammal and invertebrate resources, water and sediment quality at Arvik Mine will be collected.

Long-term Plans

Research into ways in which development activities may impact on aquatic resources and the means by which impact might be minimized.

Development of criteria for the protection of aquatic resources from pollution and environmental disturbances.

Minimization of the adverse effects of industrial development by making recommendations to the developer, enforcing regulations and understanding the resource.

Industry Services Branch

Responsibilities

Monitoring and standardizing of plants to ensure construction, equipment and operating regulations are followed; technical assistance in handling, processing, transportation, storage and distribution of fish and fish products; laboratory analysis of domestic and imported products, plant sanitary surveys, water and ice analysis;

Inspection of freshwater species to ensure market acceptance of domestic and exported fish and fish products; inspection of fishing vessels for voluntary compliance to equipment and to operating standards;

Assistance to industry towards cost of constructing or modifying commercial fishing vessels under national Fishing Vessel Assistance Plan;

Administration of vessel insurance program to promote insurance coverage of commercial fishing vessels under Fishing Vessel Insurance Plan;

Administration of ice-making or ice-storage facilities under national Fish Chilling Assistance Plan.

Review of 1975-76

Registration of processing establishments in the Northwest Territories (there are six registered processing plants, one registered cannery and numerous non-registered packing plants) was conducted.

Collection and end-of-line samples, water and ice samples, in-plant sanitary surveys, quality demonstration, *T. crassus* determinations were made.

Training courses were established at various locations for primary commercial fisherman and industry management personnel.

Carried out destructive sampling for *T. crassus* infestation in whitefish/tullibee samples from NWT to obtain current information for inclusion in Whitefish Classification Manual.

Carried out sample collection for contamination analysis on freshwater species.

Hay River, NWT office assisted with development of grade standards for fresh, frozen, canned, packaged and cured fish and fishery products in order to establish baseline data on present quality levels from boats, plants, vehicles and retail outlets.

Provided fish chilling assistance for three commercial fishing facilities in NWT.

Plans for 1976-77

Carry out surveys of commercial fishing vessels as the basis for an inspection and certification program;

Carry out experiments designed by Industry Services with prototype fishing vessel in northern locations;

Conduct design and specification studies on mobile fish processing plant developed by Industry Services to determine application in remote areas;

Become more involved, where applicable, in vessel insurance and vessel subsidy programs;

Maintain routine surveillance of plants and products in NWT.

Long-term Plans

The continued inspection of domestic and imported fish and fish products to maintain standards pertaining to hazardous substances, organoleptic, bacteriological and labelling requirements, and to assist industry in improving processing techniques and product development;

To complete current surveys aimed at determining what facilities are used for holding and transporting fish, i.e. boats, land vehicles and planes, to improve quality and eliminate rejection due to spoilage;

To complete surveys on over 20 unregistered facilities to determine construction, equipment and operating compliance with basic sanitation as a requisite feature.

Ocean and Aquatic Sciences

Oceanography

Review of 1975-76

The Sea-Air Interaction Group at Bedford Institute of Oceanography (BIO) continued a series of experiments in the Beaufort Sea. Wind drag and heat exchange at the surface of pack ice were measured by eddy flux analysis of records of turbulent wind and temperature fluctuations measured at a point a few meters above the ice. The aim is to parameterize the wind stress and heat flux in terms of wind speed, surface topography, and temperature so that air-ice interaction can be better represented in ice drift models and meteorological models. During April 1975, measurements were made at the main camp of the Arctic Ice Dynamics Joint Experiment (AIDJEX), with field operations supported by Polar Continental Shelf Project. Further measurements were conducted in February and March 1976, which also contributed to calibration activities for the AIDJEX profiling tower.

A study has been initiated by the BIO Ocean Circulation Group to investigate the offshore branch of the Labrador Current and the renewal of Labrador Sea water. This project is being conducted in co-operation with the *Centre National pour l'Exploitation des Océans (CNEXO)*. A preliminary cruise was made by *CSS Hudson* during February and April of 1976, involving a number of current meter strings, towed and vertical CTD measurements, and the use of neutrally buoyant floats, as well as nutrient measurements. Three French oceanographers participated in this phase. The main experiment will involve a full year of observations in 1978, with the possibility of involving a French research vessel.

During the summer of 1975, OAS Central Region (Burlington) conducted a multidisciplinary survey of Hudson Bay using *CCGS Narwhal*. The parameters investigated included bathymetry, gravity, magnetics, CSTD's, and phytoplankton species distribution. The entire bay was covered via east-west transects at 45 kilometer spacings. An oceanographic survey was started of the La Grande estuary, involving currents and ST measurements. The coupling between Hudson and James Bay was also examined, involving five strings of current meters across the mouth of James Bay.

The winter of 1975-76 also saw the second year of a winter program on the circulation under ice in James Bay, with emphasis on the La Grande River plume. This was carried out by helicopter in conjunction with gravity and bathymetric work.

The Frozen Sea Research Group had a large number of projects in 1975-76. These included laboratory studies of the behavior of oil under ice and possible minimum thickness of oil in leads (undertaken under contract by Imperial Oil), field studies of oil under ice (under contract to Norcor Ltd.), simulation of water circulation associated with a blowout from the seabed (simulated at a site in Saanich Inlet), and tank experiments on emulsion formation near the seabed during a blowout. Statistical analysis was made of

two years of Beaufort Sea ice data derived from laser profilometry and with reference to its role in oil containment. Studies are also continuing on salt rejection at the ice-water interface of a growing ice sheet. Assessments were made of the environmental effect of mine tailing disposal, such as for Little Cornwallis Island and Strathcona Sound.

Other OAS studies included a winter program to collect data on the character of the winter ice cover at Pond Inlet, a statistical study of the severity of icebergs in the northwest Atlantic, a preliminary study via a box model of the transport of multi-year ice in the Beaufort Sea, and a numerical tidal model for Hudson Bay. A second edition of the *Bibliography on Northern Sea Ice* is nearing completion.

The Ocean Technology Division, Ottawa, was involved with interpretation of the signatures obtained over sea ice with various remote sensing tools, including the basic microwave scattering behaviour of sea ice and its dielectric properties. Analysis of this data from the main AIDJEX experiment has been completed. Other data analysis, in the context of the Beaufort Sea Project and the Arctic Islands Pipeline Program, has also been completed.

By far the largest program in 1975-76 was the Beaufort Sea Project. Many of the sub-projects were reported a year ago, and last summer the field investigations were completed. Final reports for sub-projects will be completed in early 1976-77. The most important milestone is that a preliminary environmental assessment of offshore drilling on the Beaufort Sea was completed and published by the Department of the Environment.

Plans for 1976-77

In 1976, data analysis will be carried out on the Labrador Sea data, to serve as a basis for the planning of the 1978 field program with the French CNEXO. In Hudson Bay-James Bay, work will continue on currents, circulation, water exchange, river plumes, and coastal jets. Another winter program of oceanographic measurements will also be carried out, in Belcher Channel, along with a hydrographic survey of that area. Additionally, a reconnaissance program of current and STD measurements will be made of Penny Strait.

Several small extensions of Beaufort Sea work will include completion of a storm surge modelling program and a modest wave climatology study. In the Archipelago, there will be a modest program to study surface water and ice movements.

Many of the 1975 activities of the Frozen Sea Research Group will continue in 1976. Of particular interest will be a current measurement program across Byam Martin Channel and detailed laboratory and field testing of a new Norwegian ultrasonic current meter with a detection capability in the 1 mm/sec range. With main involvement from the Frozen Sea Research Group, an international co-operative project on fjord research under the umbrella of International Decade of Ocean Exploration (IDOE) has been set up with Canada as its proponent. Some exchange of personnel with Norway has been arranged, and Chile, Denmark, and Iceland have indicated interest for similar arrangements.

While the AIDJEX field program is winding down, the Floating Ice Section, Ottawa will in 1976 be involved with the analysis of the data acquired during the AIDJEX ground truth program and of the airborne active and passive microwave data acquired as part of AIDJEX by NASA's Goddard and the Jet Propulsion Laboratory (JPL). Further flights using active and passive microwave sensors are planned for the Canadian Archipelago and Mackenzie-Beaufort region.

Long-term Plans

To gather and interpret chemical and physical oceanographic data for a study of the environmental conditions and properties and the dynamic processes that effect the distribution of potential pollutants; the advection and mixing of arctic waters, and the formation and movement of ice.

Canadian Hydrographic Service

Responsibilities

To carry out hydrographic surveys in northern waters. To produce and distribute nautical charts, sailing directions, tide tables and reports based on survey activities and other sources.

Review of 1975-76

On the Mackenzie River, the chartered vessel *Radium Express* conducted revisionary surveys: reconnaissance trips were made up the Liard - Fort Nelson River System.

A multi-parameter survey with wide line spacing was undertaken of Hudson Bay and at Povungnituk detailed hydrography was obtained.

Two winter operations were carried out: hydrographers assigned to the Polar Continental Shelf Project completed the survey of Nares Strait and in James Bay a through the ice sounding program was done. Both operations involved considerable liaison with the Dominion Observatory, EMR. A special evaluation was made, under contract with a commercial firm, of a tracked vehicle outfitted with special equipment for sounding through ice.

CSS Baffin worked in Foxe Basin and hydrographic operations were undertaken by the following MOT icebreakers: *CCGS John A. MacDonald*, *CCGS Louis St. Laurent*, *CCGS Labrador* and *CCGS d'Iberville*. These vessels carried out projects in Strathcona Sound, Peel Sound, Resolute, Franklin Strait, Cape Dyer, Cade Inlet, Intrepid Passage and Admiralty Inlet.

In the Beaufort Sea, tide and storm surge propagation were monitored and successful tests were carried out on tide gauges in Nares Strait. Submersible tide gauges were installed at two permanent stations in the Eastern Arctic - at Fibisher and Clyde River.

Plans for 1976-77

CSS Parizeau will undertake a major operation in Amundsen Gulf. The *Radium Express* will again operate in the Mackenzie area, in the Delta and at Hay River and tidal and current programs will continue in the Beaufort Sea and adjacent waters and on the Mackenzie.

Winter surveys are in progress in Belcher Channel north of Devon Island and in James Bay. *CSS Narwhal* will continue operations in Hudson Bay with detached parties at Eskimo Point and Whale Cove.

CSS Baffin will resume survey operations in Foxe Basin. Dependant on the availability of MOT icebreakers for hydrographic work, surveys will take place in the Arctic Archipelago. The area of interest are in Eastern Viscount Melville Sound and Queen's and Wellington Channels.

Long-term Plans

To complete standard hydrographic and resource surveys of the northern waters as soon as possible and to continue the publication and maintenance of up-to-date nautical charts on the regions;

To carry out reconnaissance surveys when it is necessary to chart ahead of the regular surveys;

To maintain reliable sailing directions as published in the Pilot of Arctic Canada;

To publish tide tables to meet the needs of northern navigation and to carry out research to enhance our knowledge of tides in northern waters.

Planning and Finance Service

The Planning and Finance Service provides a variety of support facilities for the line services of Environment Canada, including information, computing services and personnel. The responsibilities of three of its directorates however have some direct relevance to the North and a brief report on each follows.

Liaison and Co-ordination Directorate

Responsibilities

This Directorate co-ordinates environmental and renewable resource activities of an inter-service nature in negotiations or conferences involving other departments of the Federal Government, provincial governments, governments of other countries, and international organizations. For other departments, governments and agencies, it serves as a central point of contact within the Department of the Environment, and provides the contact point to facilitate the conduct of new or ongoing activities. It collaborates with other services of Environment Canada to assist in formulating broad policy.

The Directorate's activities are generally national or international in scope, but there are specific responsibilities related to the North, particularly that of assisting Services representing Environment Canada on the various committees of the ACND. There are also northern aspects to a number of environmental issues raised in bilateral and international discussions, including activities which involve the United States.

One example of the Directorate's activities would be the following. As part of the Canadian response to the Unesco Program on Man and Biosphere (MAB), one of four sub-programs under development deals with the question of technological change and industrial development in the Arctic, sub-Arctic and other isolated regions and the consequential impact on social and cultural patterns, environmental quality, and wildlife productivity. A research framework for MAB activities in the North is now in preparation. MAB is a co-ordinated and integrated interdis-

ciplinary research program designed to examine specific problems with a view to identifying potential public policy alternatives. The Secretariat for the Canadian MAB program is centred in the Liaison & Coordination Directorate.

Office of the Science Advisor

Responsibilities

To provide advice on the science related policies and the effectiveness of scientific activities of the Department,

To study the need for and application of scientific and technical information, as it relates to the environment and the use of renewable resources, in the industrial and social activities of Canadians,

To explore and develop new techniques for obtaining and relating scientific knowledge of the environment and its effect on human activities,

To indicate the possible consequences of natural and/or man-caused changes and influences in the Canadian and world environment, and their potential effects on resources use, prosperity, and way of life,

To communicate and co-ordinate information on the environment and resource use, and to relate such information to the programs and responsibilities of the Department.

Review of 1975-76

In 1975, the Office of Science Advisor undertook the following activities with specific northern or arctic content:

- identification of potential projects in the fields of atmospheric science, hydrology, marine and aquatic biology, oceanography, and ecosystems studies that might be pursued under the Canada-USSR General Exchanges Agreement;
- co-ordinated the contribution, on environmental matters, for discussion through the Advisory Committee on Northern Development, with the United States Interagency Arctic Research Co-ordinating Committee;

- co-ordinated the federal environmental interests in activities of the Committee on Science and Technology of the Advisory Committee on Northern Development, in particular with regard to international aspects of environmental research and activities;

- provided liaison and co-ordination for discussion of Canadian interests in proposed or on-going multi-national polar research programs in fields of heat exchange, ice dynamics, marine geophysics, arctic tectonics studies, environmental vulnerability studies, etc; and

- contributed to the information on the effects of energy activities on the environment of northern Canada, as part of the analysis of energy policies for Canada.

Plans for 1976-77

Preparation of an identified plan for northern science thrusts in environmental studies.

Continued co-ordination and analysis of science and technology programs related to the environment in northern Canada and the polar regions.

Long-term Plans

The long-term plans of the Office of the Science Advisor are to fulfill the above responsibilities as they pertain to departmental undertakings in the North.

Department of External Affairs (EA)

The Department of External Affairs is concerned with activities in the North conducted on behalf of or in co-operation with foreign governments or their agencies. A member of the Advisory Committee on Northern Development (ACND), the Committee on Northern Transportation and other bodies, the Department provides advice on matters having foreign policy implications, maintains a co-ordinational and operational role in matters of international law and policy relating to the Arctic, and has responsibility for the negotiation of agreements with other countries arising out of activities or proposed activities in the North.

There is no single division within the Department of External Affairs charged with control of operations relating to the Arctic; rather a number of different divisions handle different aspects of the situation.

The Scientific Relations and Environmental Problems Division (ECS) seeks to co-ordinate Canadian policy on scientific activities of foreign governments or their agencies in the Canadian Arctic and provides advice to the ACND Committee on Science and Technology on the international policy aspects of scientific conferences, exchanges and agreements. The Division acts as a focal point for inter-departmental considerations of requests by foreign agencies to conduct scientific activities in the Canadian North. An example is the US "Operation Periquito", which is a barium plasma probe of the magnetospheric cleft involving activities in the vicinity of the north magnetic pole.

The Transport, Communications and Energy Division (ECT) co-ordinates departmental responsibilities in a wide variety of areas including the international policy aspects of northern pipelines; Arctic shipping; and co-ordination of information-gathering of world-wide Arctic transportation technology. Recent areas of activity include the monitoring of the procedural and political developments in the USA as regards the possible construction of a northern gas pipeline, and the provision of assistance in the negotiation of a Transit Pipeline Agreement with the USA.

The Commercial Policy Division (ECL) follows closely foreign economic interests in the North. Of particular interest are potential investments in and extraction of

northern minerals by foreign interests, and the compatibility of such projects with our domestic and foreign policy objectives.

The Legal Operations Division (FLO) is responsible for international legal aspects of the Arctic and for ensuring that activities and programs relating to the Arctic are consistent with existing and evolving principles of international law. For example, FLO oversees the application of Canada's rights and duties as contained in the 1958 Convention on the Continental Shelf. An agreement with Denmark on the delimitation of the Continental Shelf between Greenland and Canada is based on the 1958 Convention. FLO has general responsibility for the international recognition of and respect for Canadian sovereignty, and for the laws and regulations which are aspects of this sovereignty. Thus, in consultation with departments and agencies having specific responsibility for surveillance of coastal waters and for enforcement activities, FLO is concerned with matters of foreign use or transit of Canadian waters in the Arctic. With respect to environmental law in particular, FLO has responsibility for co-ordination of Canadian action taken at the international level to prevent ocean pollution in a manner consistent with the 1970 *Arctic Waters Pollution Prevention Act*. FLO has co-ordinated efforts and advised on the legal aspects of bilateral discussion with the United States on environmental implications of Arctic activity in 1976.

In 1975-1976, FLO concentrated its efforts on the third and fourth sessions of the Third United Nations Law of the Sea Conference, which met in Geneva and New York, and which is intended to achieve a comprehensive internationally recognized regime for the world's oceans and offshore seabeds. With respect to the Arctic, FLO placed considerable effort on achieving international recognition by the Conference of the special rights and responsibilities of coastal states with respect to setting standards for the prevention of pollution from ships in Arctic ice-infested waters. The Division has also played an active role in the discussions in the OECD and UNEP on environmental issues, many of which pertain to the Canadian Arctic.

The Department of External Affairs also deals with exchanges of scientists, senior foreign editors or other media personnel and foreign government officials who wish to tour the Arctic; this process is facilitated with the aim of encouraging the expansion, among the foreign public, of knowledge of Canadian developments, and of inducing an interchange of ideas on methods of dealing with problems peculiar to all Arctic areas. Abroad, the posts maintained by the Department of External Affairs attempt to facilitate the travel and edification of Canadians wishing officially or privately to examine governmental and non-governmental practices in northern areas of foreign nations; the missions also gather information on such topics for the use of various government departments and agencies in Ottawa. Five offices are responsible in this area.

The Northwestern European Division (GEC) provides assistance and liaison for co-operative activities between Canada and the Nordic countries in their Arctic territories. During 1975-76, a research officer with the Department of Indian Affairs and Northern Development was assigned to Kautekeino, Norway, to produce a film on the socio-economic conditions of the indigenous people (Lapps) of Scandinavia.

The United States Division (GWU) is responsible for the Canada-USA aspects of Canadian activities in the Arctic. The Division has co-ordinated interdepartmental consultations and consultations with the USA on the bilateral aspects of the exploratory drilling project in the Beaufort Sea. The Division has also been responsible for co-ordinating continuing negotiations on an agreement with the USA covering the reconstruction of the Canadian section of the Haines Road and the Alaska Highway from Haines Junction to the Alaska/Yukon border.

With regard to the *Eastern European Division (GEA)* emphasis continued to be given to exchanges with the Soviet Union on Arctic matters. Difficulties in obtaining reasonable reciprocity, however, remained an important limiting factor especially in the field of Arctic sciences.

In the social and cultural field, the *Division of Cultural Affairs (FAC)* is regularly responsible for world-wide exhibitions of travelling collections of Canadian art, including five collections of Inuit prints which have been shown in galleries and museums in France, Belgium, Italy, Germany, Norway, Denmark, Yugoslavia, Cuba, Venezuela, Mexico, Argentina, Colombia, Peru and Chile. These collections will be circulating this year in many additional centres in the United States, the Pacific and in Europe.

The *Information Division (FAI)* is sponsoring showings in Europe and the USA of a new and major exhibit on the North which demonstrates the proximity of Northern lands, the similarities of environment and the perils of technological impact on that ecologically vulnerable region. The exhibit focuses attention on the peoples of five major arctic regions: Alaska, Canada, Greenland, Scandinavia and the USSR. First shown in The Netherlands, this Circumpolar Exhibit has toured England, Denmark, Norway, Sweden, Finland and the USSR during the later half of 1975 and the first half of 1976.

The Visits and Speakers Section of FAI has sponsored during 1974 and 1975 visits to the North of prominent foreign journalists and opinion-formers from Germany, the United Kingdom, Poland, the USA, South Africa, and Korea. More visits are planned for the coming year in order to acquaint interested persons from other countries with the Canadian Arctic region and the problems it must face.

The Division's Creative Services has also prepared numerous articles and photostories for Canadian Embassy publications in the USA, the United Kingdom, The Netherlands, France, India, Australia and Japan. Articles on the North have also appeared in the Department's publication, *Canada Weekly – Hebdo Canada – Noticiario de Canada – Profil Canada*.

The Division has and will continue to distribute governmental as well as non-governmental publications on the North to all our Embassies abroad and to purchase for presentation to distinguished persons abroad suitable books and examples of Northern handicrafts, such as Eskimo prints and carvings.

The Department of External Affairs will continue to maintain its interest and activities in the international aspects of private and governmental activities in the North.

Department of Indian Affairs and Northern Development (DIAND)

Indian and Eskimo Affairs Program

Yukon Territory

Responsibilities

The Regional Director General, with headquarters in Whitehorse, is responsible for: Community Affairs (not all services); Education (Placement and Relocation services, University and Professional training, Vocational Training outside Yukon, Maintenance of Pupils in Post-school Programs, High School Summer Student Programs); Economic Development.

Community Affairs

Responsibilities

To administer those sections of the Indian Act that have general application to all Indians and in particular those sections that apply to Indian Reserves. Of these, those referring to membership, Band Councils, management of Indian monies, estates and other related matters are most frequently used.

There are six Indian reserves in the Yukon Territory, but only two of them, at Dease River and Teslin, are occupied.

Review of 1975-76

Social Services

A series of workshops were conducted to assist Band welfare administrators in providing counselling services designed to help employable persons find work. Emphasis was placed on increasing native participation in resolving problems related to child welfare, rehabilitation, and related services. Emphasis has also been placed on maximum community involvement in the care of elderly people.

Community Improvement

The main program in 1975 was the subsidy housing program which enabled homes to be constructed on land set aside for Indians. Twenty-nine new units were completed, and 10 units repaired.

A carpenter shop was established in the Yukon Indian Centre to construct cupboards, precut and preassemble rafters and other framing materials. This centre also acts as a training centre for Indian carpenters.

A new Band hall was constructed at Teslin. Another Band hall at Champagne/Aishihik is under construction. The Liard Band office, destroyed by fire in late 1974, has since been replaced.

Progress has been made on road construction ($\frac{3}{4}$ mile new gravel and $\frac{1}{2}$ mile new direct construction and $\frac{3}{4}$ mile reconstruction). Two Bands are administering their own Roads Capital Program.

A well was drilled at Teslin and electrical upgrading of homes was completed at the Selkirk Indian village.

Four double garages were constructed at: Ross River, Pelly Crossing, Teslin and Upper Liard.

One water delivery truck was purchased for the Upper Liard Band and two vehicles were supplied, one each for the Teslin and Dawson Bands, to permit more involvement by the Bands in supplying their own requirements and to eliminate other high haulage costs.

Fire Protection

Arrangements have been completed with the Northern Affairs Program (DIAND) and the Yukon Territorial Government to train a native person in fire protection and prevention.

Band Management

Two all-Chiefs meetings were held to discuss general budget breakdown and program priorities. Program circulars pertaining to Local Government were reviewed.

Nine hundred days of training were provided by departmental staff for Indian Chiefs, councillors and Band staff in the area of program planning, management and administration of the Social Assistance Program.

Plans for 1976-77

Social Services

Efforts to improve the quality and quantity of social services will continue through Band training programs. Transfer of the management of the Social Assistance Program to the Teslin Band has been requested by the Band. Similar requests are anticipated from other Bands.

Community Improvements

Forty new homes will be constructed through the Subsidy Housing Program. Major renovations and repairs will also be carried out on Indian homes, as well as some of the Band halls. Additional drainage is planned for Burwash Landing and Pelly Crossing. New road construction is planned for Pelly Crossing and Lake Laberge during the summer of 1976.

Band Management

More emphasis will be placed on developing an understanding of Local Government Guidelines through Band level training sessions as well as general information meetings in various locations in the Yukon.

Education

All the education services in the Yukon are provided by the Territorial Government for all school-age children; with the exception of placement and relocation services, university and professional training, vocational training outside the Yukon, maintenance of pupils in post-school programs, and high school summer student programs, all of which are provided by Indian and Eskimo Affairs.

Responsibilities

The Department assists the Yukon Government Department of Education in matters related to Indian student enrolment in both elementary and secondary schools. The Department operates Yukon Hall in Whitehorse, three group homes and a boarding-home program for students without access to regular school services and for students whose parents or guardians are migratory for at least one-third of the year.

The Department also provides financial assistance to students attending university, vocational schools and other institutions where such assistance is not available from the Yukon Territorial Government. The financial assistance covers purchase of books and supplies, tuition fees, approved school facilities, monthly allowances, transportation and clothing expenses.

Students are given assistance in finding part-time and summer employment through various public and private agencies.

In co-operation with Manpower, employment and relocation services are provided to assess the skills of the Indian labour force, recommend training programs and assist in obtaining employment. The Department maintains contracts with Manpower, vocational training institutions, the Yukon Native Brotherhood, and other interested agencies to develop and improve training programs.

Counselling and information services are also provided to the Indian population in connection with the off-reserve housing program.

Review of 1975-76

In co-operation with Canada Manpower, the Outreach Program helped improve manpower utilization through programs as Training-On-The-Job and LEAP.

The Yukon Outreach Committee provided services to a number of Yukon communities during the year with a staff of 13 workers.

A survey of high school drop-out students over the past few years was conducted to determine if these students are interested in furthering their academic or vocational training.

The Yukon Native Brotherhood Education Section was given \$15,000 to conduct a study into various operational models of Indian education and to assemble information on the Yukon. This information will be made available to the Department of Education, Yukon Territorial Government.

By the fall of 1975, three group homes were in operation to provide living accommodation for 24 students whose parents leave the community to trap during the winter months. There were 129 students in residence at Yukon Hall and attending school in Whitehorse in grades one through twelve.

A social counsellor has also been hired to work with students attending school in Whitehorse.

Sixteen students are presently out of the Territory attending university and vocational training institutions.

A cultural education centre, established at Whitehorse with departmental funding, is providing an excellent service to the Indian people in cultural development and emphasizing native relevancy over the educational process.

Off-Reserve Housing

Active interest is being shown by Indian people in the Off-Reserve Housing program. However, the high cost of housing and the limited amount of money available for second mortgage funds has made it almost impossible for the program to operate under existing legislation. Alternate plans are suggested to clients, namely the Assisted Home Ownership Program.

Plans for 1976-77

In accordance with the Department's policies, encouragement and support for parental participation in school and advisory committees will continue. Support will also be given to expanded kindergarten programs and to the provision of counselling and orientation for students who leave their home communities to continue their education.

A cross-cultural co-ordinator program with a budget of \$50,000 will be operated at the settlement level during the school year, 1976-77.

The program will permit the Chief and Council to employ a full or part-time co-ordinator whose main function will be to work with students and parents. A short training program will be necessary for the employees of the program. It is anticipated that the Yukon Department of Education and Manpower will provide the training.

Plans are currently underway for the Summer Student Employment Program. \$21,000 will be available for this purpose. The program is primarily designed to give direct benefit to the home community. Two other similar programs are being sponsored by Northern Affairs and Parliament Canada.

Economic Development

In co-operation with the Indian people and other government agencies, private firms, organizations and individuals, plan to organize and initiate a comprehensive economic development program to include logging, sawmilling, big game outfitting, handicrafts, trapping, fishing, commercial and industrial development and stimulate a steady growth of self-reliance and economic independence.

Review of 1975-76

Fishing – Fishing by Indian people continues to be primarily for home consumption with commercial fishing playing a very small role.

Big Game Outfitting – Teslin Outfitters Limited, an Indian owned and operated company, is continuing to provide a high level of service to its customers. Many Indians are obtaining seasonal employment in this field and have considerable experience in the operation of these ventures.

Handicrafts – The Yukon Indian Arts and Crafts Society, which was founded in 1974, has commenced the development of a comprehensive program intended to provide the financial assistance and training required to create a viable arts and crafts industry in the Yukon with emphasis on increased production and marketing.

Forestry – The sawmill operation at Upper Gard will be revitalized.

Trapping – Expanded markets and continuing high prices resulted in a successful year for trappers. The Yukon Trappers Association with financial assistance from the Department is playing a leading role in encouraging increased fur production in the Yukon. The efforts of this association in marketing furs has resulted in a high percentage of sale value returned to the trapper. The Hide Collection Program was successful in supplying good hides to craftsmen.

Industrial and Commercial – The Selkirk Indian Band service station is operating and preparations are being made for the increased summer traffic. Funds have been approved to assist the Band in operating the business and to expand the scope of its operation. The Teslin Indian Band and several Teslin individuals have approached the Indian Economic Development Fund to purchase Teslin Wood Products from YANSI. The request is presently under consideration in Ottawa. Lard Logging at Watson Lake is supplying timber to DIAND. The Indian people of Lower Post have recently opened a small grocery store. Managerial help is being extended through the Department and the Economic Development Officer of the Yukon Native Brotherhood. Appraisal studies were conducted for the purchase of a store and handicraft shop at Teslin.

Indian Economic Development Fund – For the first four years of operation of the IEDF, the Yukon was third regionally in terms of per capital loan value and number of people per loan. The Yukon had 1.5 per cent of the registered native population and 1.2 per cent of Indian Economic Development Fund as of beginning of the fiscal year.

Business Services – The Economic Development staff has been increased in response to the growing need for financial, technical and managerial assistance to Indian businessmen.

Plans for 1976–77

Fishing – Low commercial limits on Yukon lakes will continue to restrict fishing to a minor role in the Indian economy.

Handicraft – The Yukon Indian Arts and Handicrafts Society, depending upon the availability of additional funds, plans to expand their services to the village of Haines Junction and Teslin.

Forestry – The present depressed market for forestry products will probably provide no further expansion in this area in 1976.

Trapping – The Yukon Trappers' Association will continue to provide marketing services and other assistance to trappers. The introduction of humane traps will require considerable training and financial assistance to enable Indian trappers to successfully adjust to the change.

Industrial and Commercial – The Department will continue assistance to Indian business with emphasis on those that provide necessary services to Indian communities. The third phase of the garage at Pelly Crossing will be completed. Other similar communities will be assisted in their business ventures.

Indian Economic Development Fund – Increased utilization of guaranteed bank loans and outside financing is resulting in a decline in direct lending from the fund. An increased demand for grants and contributions from the fund for equity, managerial assistance and feasibility studies is expected.

Business Services – Increased emphasis will be placed on the provision of managerial assistance to the Indian businessman, improved financial controls and increased consultation with qualified business advisors will be required in the initial stages of operation.

Long-term Plans

To promote and assist the development of economic enterprises including small business; to provide the supervision, managerial and training support required to establish a firm foundation for eventual economic independence; to improve the business relationship between financial institutions and the prospective Indian businessman, by establishing equity through the provision of grants, infrastructure and managerial assistance.

Northwest Territories

Responsibilities

To assist the registered Indian people of the Northwest Territories in social, economic and Band development, in close consultation and collaboration with the Government of the Northwest Territories and individual Indian Bands.

To assist the Indian people of the Northwest Territories to optimize their participation in educational and cultural development programs.

To assist the Indian people of the Northwest Territories with research of their land claim; and to establish an effective interchange of information and ideas related to Indian Affairs policies and programs.

To establish a responsive and reliable system of consultation and awareness among all federal departments operating in the Northwest Territories regarding the needs, desires and aspirations of the Indian people, and the role that Departments can play in assisting the Indian people in this regard.

Review of 1975–76

The Economic Development activity has been maintained at a brisk pace. Through co-operative ventures with the Territorial Government administration, further support and assistance has been provided to the Indian people of the Northwest Territories.

A noted awareness has been shown at the Settlement and Band level of the availability of resources and support which can be placed at the disposal of Indian people.

Loans and grants processed during the year cover a variety of projects, running from a multi-thousand dollar co-operative venture to small loans in support of individual business concerns.

The Core Funding Program has been implemented. It should be noted that this program is being controlled and administered by the Indian Band Councils structure in the Northwest Territories.

Hay River Indians received training in Band Management at Oo-Za-We-Kwun, Rivers, Manitoba. Similar training programs are planned for other Bands.

Consultation with the Indian people, the Chiefs, Band Councils and native organizations has been maintained at a satisfactory level.

Financial assistance has been provided to the Indian Brotherhood of the Northwest Territories to support their efforts in the Band development program being carried out by the Brotherhood. Assistance has also been provided to the Indian Brotherhood in the field of research of Indian claims and land settlement.

Plans for 1976-77

All phases of programs now being carried out in the Northwest Territories will continue to be supported.

Additional staff in Economic Development at CO-2 and CO-3 levels will be provided. This staff will operate among the Lang Building at Yellowknife, and work in close co-operation with NWT Government staff. Another Economic Development staff will be placed at Inuvik to provide economic development activity in that northern area.

Parks Canada

National Parks Branch

Responsibilities

The National Parks Branch is responsible for Canada's national parks and national landmarks. The Branch examines and evaluates terrestrial and marine sites to determine their potential as national parks and landmarks, and plans for the development of existing parks. There are four national parks north of 60°: Kluane in the Yukon Territory, Wood Buffalo, Nahanni and Auyuittuq and a national park reserve on the Eastern Arm of Great Slave Lake, all in the Northwest Territories. Auyuittuq is Inuit meaning "Land of the Big Ice", the name selected in 1975 for the national park on the Cumberland Peninsula of Baffin Island. Kluane, Nahanni and Auyuittuq National Parks have been included in the Schedule of National Parks Act which was amended in 1974.

Review of 1975-76

Aerial and ground reconnaissance surveys were made on the tundra areas of the Mackenzie and Keewatin Districts and the Arctic Islands. Several Natural Areas of National Significance were identified and will be studied more intensively in the future. These include the Melville Hills, Bathurst Inlet, Thelon Game Sanctuary, Wager Bay, northeast Southampton Island.

Following these surveys, a detailed evaluation was made of the suitability of Bathurst Inlet as a national park. It was concluded that, as far as landscape and wildlife are concerned, the Inlet area qualifies for inclusion in the national parks system. However, there are certain social and economic questions which must be resolved before proceeding further with park planning.

Studies in Hudson Bay indicated that the Belcher Islands have national significance meriting further investigation. A follow-up socio-economic study is required before a definite park proposal can be developed.

Plans for 1976-77

A new park study will be made in the Wager Bay area, accompanied by an assessment of the effect a national park would have on the local Inuit economy and way of life.

A similar study in relation to the Bathurst Inlet Inuit will be conducted as a follow-up to the 1975 bio-physical study.

A new park study will be made in northern Ellesmere and Axel Heiberg Islands as a follow-up to reconnaissance studies made in 1972.

A reconnaissance study will be made of the Foxe Basin and adjacent lowlands. This will complete the study of the Arctic north of the tree-line at the reconnaissance level; future studies will concentrate upon identified areas of park interest.

Regarding the East Arm-Artillery Lake Park Reserve, the Snowdrift Indian Band will be consulted about the effect of a park upon their life and economy. Further planning will depend upon the outcome of this inquiry.

Proposed Pingo National Landmark, Tuktoyaktuk Peninsula, NWT

Review of 1975-76

A visit was made to the proposed National Landmark Site to investigate possible changes in the boundaries described in the landmark proposal. It was decided to retain the boundaries as initially proposed.

Plans for 1976-77

No further field work is envisioned. The national landmark proposal will be considered in relation to the general land use plan being developed for the Mackenzie Delta.



Future National Park, Great Slave Lake, NWT

An area of 2860 square miles around Fort Reliance on the East Arm of Great Slave Lake was set aside in 1970 as a future national park. A five-year assessment period was agreed to at the request of the Snowdrift Band in order to provide sufficient time for the Band to examine the possible effects of the park on their way of life.

Review of 1975-76

The five-year assessment period expired in March 1975, however, and to date the Band has not expressed its view on the potential impact of the park.

Until the Band's assessment is received, plans to proceed with the development of the park will be further delayed.

Wood Buffalo National Park

Review of 1975-76

An interpretive unit plan for the Peace-Athabasca Delta was completed following field work conducted in 1975. Interpretive planning work was also undertaken in the Salt Plains and the Nyarling Korst areas. Regular interpretive presentations were begun in Fort Chipewyan and were well received.

The on-going bison management program continued with aerial surveys to determine population numbers, cow-calf counts and migration patterns. The anthrax vaccination program met with limited success due to unfavorable conditions for herding the animals. Monitoring studies on bison, waterfowl, muskrats and vegetation were continued in the Peace-Athabasca Delta.

There were 26 forest fires in the park during the summer of 1975; the average size kept to under two acres. There was no action taken on two fires owing to the location and natural ecosystems. The comparatively low amount of acreage burned may be credited to an efficient, reliable and enthusiastic forest fire protection organization. The total cost per fire was reduced by about 26.5 per cent in 1975.

The Youth Conservation Corps Program was a huge success for its first year.

Assessments of the camp by the boys and girls were most favorable.

Area plan concepts for the Pine Lake activity area were completed.

Plans for 1976-77

An attempt will be made to diversify the means of interpretive communication by designing packages for use on northern radio networks and on airlines which regularly fly over the park. A park interpretive plan should be completed shortly.

Bison surveys will be continued and a vaccination program will again be undertaken. New corrals will not be established this year because of the uncertain suitability of some sites due to fluctuating water levels in the Peace-Athabasca Delta.

The Peace-Athabasca Delta monitoring programs will continue and an environmental impact assessment of Carlson's Landing will be conducted.

The Resource Inventory Program will continue.

The Forest Fire Management Program will consist of one retardant bomber, one helicopter and one detection/bird dog aircraft, six initial attack crews, support staff and nine manned fire out-look towers.

Small-scale recreational developments along park roads are to be assessed.

Siting and capacity limits for development proposals in the Peace-Athabasca Delta will be studied.

The Youth Corps Program will continue but will be located at Pine Lake instead of Peace Point.

Long-term Plans

Efforts to involve the indigenous peoples of the region in the park interpretive program will be expanded. Among the themes emphasized will be traditional native use of park resources. Future and present plans will be discussed through public participation and collaboration with the various agencies.

Nahanni National Park

Review of 1975-76

The first interpretative overview of the park was obtained in 1975. A comprehensive biophysical program began. Previous impact studies at Virginia Falls and Krause Hot Springs were monitored and impact study was conducted at Rabbitkettle Hot Springs.

Forest fire management is under contract with Northwest Lands and Forests (DIAND). Two fires occurred this year; one burned about five hundred acres and the other, two acres. The fires in sparse timber, high on the mountain slopes, proved to be inaccessible and were not fought.

A mode access study for the park was initiated and a visitor survey completed. A park brochure was published.

Plans for 1976-77

Following the 1975 overview, interpretive planning studies are to be carried out in 1976 at Rabbitkettle Hot Springs and Krause Hot Springs.

Nearing completion is a brochure dealing with hazards which may be encountered by persons travelling on the Nahanni River.

The biophysical resource inventory will continue this year as well as the monitoring of previous impact studies. A visitor use environmental impact study of Deadman Valley will be initiated. A limnological inventory program will be initiated.

Interim Management Guidelines will be completed to provide guidance for protection and management of the Park until sufficient data is gathered to prepare a Provisional Master Plan.

A fire management plan will be prepared for the park area in conjunction with the Northwest Lands and Forests Service.

The mode access study will be finalized and an information package for the master plan program will be developed.

Long-term Plans

intended that a permanent naturalist be based in the park within the next two years and that a program be developed to interpret Nahanni's amazing diversity including hot springs, canyons, waterfalls, glacier-hung peaks, caverns and other best features.

Other tasks involve the preparation of alternative conceptual plans and their review through public participation and collaboration with the various agencies concerned.

Kluane National Park

Review of 1975-76

The public access corridor study was completed and is now under management review. The objective of the study is to provide a system which will enable visitors to appreciate the spectacular features of Kluane's interior.

Interpretive Planning Guidelines for the park were completed. They will provide a framework for development of an interpretive program. In the meantime, guide interpretive excursions were offered for the first time and were well received.

Areas visited included the lower Slims Valley, the Alsek Pass and Kathleen Lakes. The biophysical resources inventory was continued and the aquatic limnology study was completed.

Kathleen/Sockeye Lake management study was conducted.

Forest fire management is under contract to the Yukon Forest Service. There were no fires during the 1975-76 season. The Conservation Corps of 15 girls completed a successful season.

Plans for 1976-77

Detailed interpretive planning work will be carried out in the corridor selected in the public access study. The interpretive program of guided excursions and audiovisual presentations will be continued and expanded.

A new brochure will be produced this year.

A climatology network will be operating this year. The biophysical land classification program will continue and the Kathleen/Sockeye Lakes management study has been extended.

A fire management plan will be drawn up for the park area in conjunction with the Yukon Forest Service.

Long-term Plans

A full interpretive plan will be produced within the next three years. Interpretive efforts will evolve in accordance with decisions taken as a consequence of the public participation program. The target date for the Kluane Master Plan is early 1978.

Auyuittuq National Park

Review of 1975-76

During the fiscal year there were about 475 visitors to the park, compared with 400 the previous year. Two new shelters were added to the existing four to serve as stations for the wardens on patrol and as emergency shelters for visitors. Two cable river crossings were installed in Pangnirtung Pass.

Facilities were improved at Overlord Campground, with the addition of five picnic tables, four fireplaces, two privies and six tent sites.

Winds of over 100 mph struck Pangnirtung in January. Parks buildings were without power for five days, but no serious structural damage resulted. Superintendent Ernie Sieber was appointed head of the hamlet clean-up committee. The Quebec regional office sent two carpenters to repair park buildings and to help the people of Pangnirtung repair their homes.

The two Inuit park wardens spent a two-week training session in Forillon and La Mauricie National Parks in October.

In the field of natural resource conservation, the following studies were finished: bio-physical classification, black-and-white aerial photos of Pangnirtung Pass, and climatology study (by Environment Canada). The glacier study was initiated.

Plans for 1976-77

Visitors arriving in Frobisher will receive an introduction to Auyuittuq through an exhibit of photographs in the airport. A major display will open at the Park Administration Building in Pangnirtung. This interpretive exhibit will include artifacts illustrating Inuit culture and an audiovisual show of the bio-physical aspects of the park.

Construction will be completed on a warden's residence, a 40-foot radio tower, three 10-foot radio towers all at Pangnirtung and two more cable river crossings.

Overlord Campground will be further improved by three new picnic tables, four fireplaces and six tent-sites. Visitors will benefit from a 26-mile hiking trail from Overlord to Summit Lake.

The Quebec Regional Office will publish a book on the park covering geology, archaeology and ecology and giving practical hints for visitors.

Studies in hydrology and climatology will be undertaken and the second phase of the glaciology study will be started.

Long-term Plans

Over the next five years, there will be only limited development of the park, such as more trails and emergency shelters. Many studies are planned, such as biophysical classification, climatology, glaciology and a bibliographical review.

The basic objective of the park continues to be "maximum conservation" and the promotion of visitor services in the surrounding Inuit communities.

National Historic Parks and Sites Branch

Responsibilities

To commemorate those places, persons or events north of 60° which have been recognized as being of national historic importance. This area consists largely of the Northwest and Yukon Territories and commemoration involves consultation with the governments of the Territories.

Review of 1975-76

The Parks Canada Dawson Planning Team has completed the first stage of an integrated plan for Dawson and the nearby Goldfields. The second phase, consisting of the development of engineering concepts, infrastructure requirements and organizational relationships has been commenced.

A drop-in centre called "Info-Centre" was open in Dawson in December. The Centre has been established to give local residents the opportunity to view and comment on the Parks Canada Development Plans.

The main foyer of the Post Office building in Dawson has been given interim restoration treatment. The building was used throughout the summer in an interpretation and information centre as well as a Post Office.

The Minister announced in June that he would seek the necessary amendments to the Historic Sites and Monuments Act that would enable the Historic Sites and Monuments Board of Canada to include members from the Yukon and Northwest Territories.

The Bear Creek property which is located outside Dawson has been acquired. This area, once the site of support services for corporate mining activity, is being considered for a variety of uses.

The enormous *Dredge No. 4*, which is located about a half mile from Discovery Claim where the first gold strike was made in 1896, was opened to the public during the summer.

Repair work was carried out on the sternwheeler *S.S. Klondike* and research continued towards physical restoration and furnishing. Access to the site was improved by the relocation of the south road.

Plans for 1976-77

The site development plan for the *S.S. Klondike* in Whitehorse will be revised to allow for the relocation of the access road. Fire protection equipment will be installed to safeguard the vessel.

Publication of a new Chilkoot Trail brochure is expected in the spring of 1976.

The Info-Centre in Dawson will continue to function, gathering information on public reaction to the Dawson Development Proposals and providing explanations to the proposals.

Research and restoration will continue throughout the year on various projects in Dawson.

Long-term Plans

The Historic Sites and Monuments Board of Canada will continue to study ways and means of commemorating the history of the subarctic with its varied themes including the people, early exploration and the fur trade.

Long-range plans call for interpretation of the *S.S. Klondike* as a "living" vessel. Aligned along the river bank, it will be approached via a re-constructed wharf and furnishings and wharf activities will portray the vessel in the process of loading supplies and off-loading cargoes of ore. On a site adjacent to the vessel, a Visitor Reception Centre is planned to provide the story of Yukon River navigation and its relationship to commerce and travel since Goldrush days.

It has been proposed that the Bear Creek property become the site for interpreting the story of gold, life of the miners and mining technology with *Dredge No. 12* moved to this exhibit as part of a sequence of the latter.

The *S.S. Keno* in Dawson is to be stabilized and consideration is being given to furnishing the vessel as if in active use.

The Dawson Development Plan suggests the restoration and furnishing of selected buildings to portray the various life styles of the people of historic Dawson. The need for an interpretation centre housed within an historic facade has been identified as well.

Agreements for Recreation and Conservation

Review of 1975-76

Specific activities in the North were restricted to a review of the potential ARC involvement on behalf of Parks Canada in the Yukon River portion of the Klondike Gold Rush International Historic Park and the inventory of resources available to ARC involvement in the Mackenzie River Valley. Both of these projects are of a long-term nature and depend largely on the actions of other agencies which clearly have development priorities. No conclusions for ARC involvement have been reached.

Plans for 1976-77

ARC is a federal-provincial program requiring a formal Agreement for its implementation. During 1976-77, attempts will be made to establish a rationale for its use in the Territories, recognizing the special federal-territorial relationship.

Northern Affairs Program

Northern Policy and Program Planning Branch

Policy and Planning ACND Division

Responsibilities

The Policy and Planning ACND Division is the focal point for carrying out, in co-operation with members of the ACN medium- and long-range socio-economic planning for the North. This includes on-going development of northern policy alternatives for the ACND and the Northern Affairs Program, regional planning in the North, the collection, analysis and review of data on government expenditures and programs for the North, and policy development and co-ordination related to northern pipeline activities.

Review of 1975-76

In co-operation with the Northwest Territories Government, work began on the development of a regional development plan for the Mackenzie Delta Region with co-ordination of federal inputs in this plan.

A study was begun on the economic stabilizing effects which pipeline construction would have on the North, and on possible measures to deal with these effects.

A number of reports on demographic characteristics of the North and on income distribution in the North were completed.

Proposals for longer term regional planning efforts in the North were developed. Data on Northern expenditures of the Federal and Territorial Governments for the period 1973-74 to 1976-77 were compiled.

A departmental research program related to northern pipeline development in the Mackenzie Valley and eastern Arctic under the Environmental-Social Program was initiated.

Liaison was maintained with other government departments, industry, academic and independent institutions on pipeline matters.

Pipeline developments and proposals for pipelines in the Canadian North were monitored.

Administrative responsibilities were carried out in connection with the Mackenzie Valley Pipeline Inquiry and summaries of the proceedings and other information concerning the Inquiry were distributed to government departments and agencies and public interest groups.

Options for the regulation of construction of a Northern pipeline were investigated.

Plans for 1976-77

To continue to participate in the development of a regional development plan for the Mackenzie Delta and to co-ordinate other federal participation in the planning.

To begin, in co-operation with the NWT Government, regional planning work in the Eastern Arctic.

To work with both Territorial Governments in the development of a longer term regional development strategy for the Territories.

To participate in the development of long-term land use planning policy for the North.

To complete work on the potential economic de-stabilizing effects of pipeline construction and possible government measures to deal with these effects.

To work with the NWT Government on the development needs, arising as a result of pipeline construction, of communities in the Mackenzie Valley outside the Delta region.

To publish data on federal/territorial government expenditures in or on behalf of the North.

To analyse northern expenditure data in relation to northern objectives and priorities and to conduct a selective review of government programs in the North.

To establish appropriate research programs related to northern petroleum development.

To continue co-ordination of an active departmental pipeline research program in the eastern Arctic.

To support procedures related to processing pipeline applications.

To monitor pipeline developments in Alaska and proposals for pipelines in the Canadian North.

To continue to maintain liaison with other government departments, industry, academic and independent institutions on pipeline matters.

To provide co-ordination and liaison as required for the Mackenzie Valley Pipeline Inquiry and to continue to provide information regarding the hearings to other interested agencies and public interest groups.

Long-term Plans

The Policy and Planning ACND Division foresees the continuation of a leading role for the Department in the formulation of regional development policies in the North and the preparation of regional development plans for specific regions. Research and analysis will be related to regional development planning; on-going compilation and analysis of Northern expenditures and inter-departmental review of effectiveness of Northern programs; and the on-going work on development of appropriate review and assessment mechanisms relating to future northern pipeline proposals, developments and overall impacts, and the development and continuation of appropriate research programs related to northern pipelines.

Northern Data and Liaison Division

Responsibilities

The major responsibilities of the Division include:

- developing, in conjunction with Territorial Governments and Statistics Canada, the systems necessary to produce regular and consistent macro-economic and manpower statistics, e.g. unemployment rates, price indices, measure of gross territorial product, for the Territories;
- providing statistical data and quantitative analyses for policy and program planning purposes in the Northern Affairs Program;
- conducting and reviewing research and distributing information on the foreign circumpolar north;
- Co-ordinating northern tours for royalty, vice regal visitors, senior members of the Diplomatic Corps, foreign dignitaries and officials of other federal departments; and
- dealing with all matters relating to geographical nomenclature in the Northwest Territories, Yukon Territory, National Parks, National Historic Parks and Sites and Indian Reserves.

Review of 1975-76

The preparation of a set of economic accounts for each of the Territories to provide yearly estimates of gross territorial product for the years 1967 to 1974 inclusive was undertaken.

Under the aegis of the Economic Planning Committee of the ACND, work began to examine the feasibility of extending the national labour force survey into the Yukon.

Work began to develop a compendium of social statistics. Using 1971 census data, statistics on employment and income from employment have been compiled with special emphasis being placed on comparisons between native and non-native northerners.

Quantitative analyses relating to resource development and territorial government financing was completed in support of policy and program development.

As part of the Sino-Canadian Exchanges for 1975-76, the Division co-ordinated the visit of a Permafrost Engineering Mission from the People's Republic of China.

A review of socio-economic development in Greenland was published.

Research was completed on a demographic study of Soviet northern native people and the oil and gas industry in the Soviet north.

Work began in Norway to conduct a socio-economic survey of northern native people and, in conjunction with the National Film Board, to produce a motion picture on this subject.

A statistical summary of the 1969-71 DIAND Northern Manpower Survey Program was published.

In September 1975, the Division, in conjunction with the Department of External Affairs, co-sponsored a northern tour for Heads of Diplomatic Missions accredited to Canada. This tour provided Heads of Missions with an appreciation of Canada's North, an area of the country not normally visited by diplomats during their tour of duty.

In October 1975, 16 members of the House of Commons Standing Committee on Natural Resources and Public Works made a fact finding tour of a number of communities in the NWT and Yukon, as well as Prudhoe Bay, Alaska.

The naming of Arthur Laing Peak in the Yukon Territory and Arthur Laing Peninsula on northern Ellesmere Island in the Northwest Territories were approved, to commemorate the late Senator Arthur Laing.

A total of 316 maps at 1:250,000 scale were amended to reflect changes to geographical names since the date of production of each map.

An accuracy check of geographical names on all maps north of 60° latitude was begun in order to check names for location, application spelling, generic term and whether or not the name is approved by the Canadian Permanent Committee on Geographical Names.

Plans for 1976-77

The major thrusts of the Division's work will be in the following areas:

- To complete updating of the Economic Accounts for the two Territories for the period 1967-74;
- to complete the assessment of the feasibility of conducting a labour force survey in the Yukon Territory, and, if feasible, to conduct a pilot survey (subject to the availability of funds);
- to co-ordinate the development of northern price indices, particularly for household expenditure items and transportation, including conduct of a family expenditure survey in the North;
- to update, as and when required, quantitative analysis already conducted on resource development and territorial government financing; and conduct a quantitative analysis, including projections, of the supply and demand for labour in the Territories;
- to publish a socio-economic survey of Sweden and Norway, and in co-operation with the NFB, produce a film on the native people of Sweden and Norway;
- conduct research on labour, taxation and local government relative to the Greenland situation;
- co-ordinate major visits in the Territories, including anticipated visits by the Governor General of Canada and the Danish Minister for Greenland;

publish reports in *Methodological Aspects of the 1970 All-Union Census of Population as Related to the Soviet Northern People*, and *Soviet Oil and Gas Industry and Summary of the Developments in the Soviet North based on Information in the Soviet Press*; continue to amend maps at the 1:250,000 scale and continue the program of checking the accuracy of geographical names.

Long-term Plans

The Division will continue to respond to requests for data, information and service on request. Specific long-term goals include the following:

- The extension of the National Labour Force Survey into both Territories;
- The publication of a Consumer Price Index for the North, which will provide for north-south comparisons and be meaningful in terms of northern consumption habits where these may differ from the south; and
- the publication, annually, with quarterly estimates, of economic accounts for each Territory.

ACND Secretariat Division

Responsibilities

The ACND Secretariat provides to the Advisory Committee on Northern Development, its specialist committees and working groups, a full range of Secretariat services to assist the ACND in carrying out its various functions.

Responsibilities of the Secretariat include: providing for all administrative and organizational needs of committees and working groups; attending all meetings; preparing concise minutes proceedings as well as background and position papers relating to the work of committees and working groups. Letters and other documents are prepared for signature of the Minister and other senior departmental officials. Ministerial briefing material is prepared on a wide range of subjects. Inter-departmental information leading to official policy proposals is collated and relevant legislation is reviewed with a view to drafting of revisions, in light of the government-approved Northern Objectives.

Review of 1975-76

During the fiscal year 1975-76, meetings of ACND Committees and working groups were organized, administered and reported on to ensure that a comprehensive record of ACND activities was maintained for further committee direction and future reference. *Government Activities in the North* was published. The Secretariat continued to publish the James A. MacInnis Foundation reports, *Arctic Diving* to complete the series. The headquarters-based committees strengthened the liaison links with the territorial co-ordinating committees by providing secretariat observers at their meetings.

Plans for 1976-77

To continue and strengthen the backup service provided to the committees within the ACND structure.

Long-term Plans

In view of the increase in committee activities and the formation of new committees, it is anticipated that greater demands will be placed upon the Secretariat. Accordingly, over the next few years, it may be necessary to, increase staff, at both officer and administrative support levels, to ensure that comprehensive secretariat services will not only be maintained, but expanded in support of all ACND activities. To enable participation by territorial officials when attendance is impossible, the installation of a teleconferencing facility is being pursued.

Northern Program Planning Division

Responsibilities

The Division is responsible for planning and developing departmental programs designed to encourage economic development in the North in accordance with departmental and national objectives and policies. The Division is divided into three sections: Resource, Transportation and Program Development.

Review of 1975-76

The *Resources Section* co-ordinated interdepartmental studies relating to the Arvik Mines Limited project preparatory to entering into an agreement with the company. Studies relating to the feasibility of a zinc-lead smelter in the Yukon were continued resulting in agreement by Cyprus Anvil Corporation to extend the provisions of the 1967 Anvil Agreement relating to smelter studies and construction for an additional five years.

Terms of reference were developed and background studies carried out relating to the benefits that could accrue to northern residents from the production of petroleum by-products from proposed Mackenzie Delta gas processing plants. Work continued throughout the year on the monitoring of the June 1974 Agreement between the Government and Nanisivik Mines Limited.

The *Transportation Section* continued its work with Ministry of Transport and Yukon Government officials on the development of a railway strategy for the Yukon. A report on the costs and benefits of several alternatives for rail expansion in the Yukon has been completed by consultants.

A study of transportation alternatives for supplying the community of Old Crow was completed and work began on a study of trucking costs in the Yukon. Preliminary work was carried out to develop terms of reference for a study of the transportation facilities required to support construction of a gas pipeline from the Arctic Islands. Transportation studies relating to the Mackenzie Delta regional plan were also carried out.

The *Program Development Section* reviewed the report of the Task Force on Northern Business Preference and made recommendations regarding implementation of the Task Forces' recommendations.

A study of the royalty provisions of the proposed Yukon Minerals Bill was completed and a proposed royalty schedule was prepared. The review of the Department's incentive programs continued with a survey of the criteria used by corporations in making decisions regarding mineral exploration in the North. In addition a consultant was engaged to carry out a study of public sector involvement in the mineral industry in several other jurisdictions.

In collaboration with the Territorial and Social Development Branch a study of the social impact of the Nanisivik Mines Limited project was initiated. Other studies carried out in the Section related to oil and gas royalties, resource revenue projections, northern roads policies and revisions to the Northern Mineral Exploration Assistance Regulations.

Plans for 1976-77

The Resources Section will continue to examine the feasibility of building a zinc-lead smelter in the Yukon. The Section will also examine newer mineral and oil and gas developments in the North to determine their potential for creating social and economic benefits for northerners.

With completion of the Yukon Rail Study, the Transportation Section will work with Ministry of Transport and Yukon Government officials in developing a strategy for future Yukon rail developments. Studies of northern trucking costs, as well as transportation studies relating to the Mackenzie Delta regional plan, will continue.

The Program Development Section will concentrate on examining how resource development in the North can be carried out to provide more meaningful social and economic benefits to northerners.

Long-term Plans

The long-term plans of the Division are: to contribute to the development of the Canadian North by developing programs to encourage economic development in the North in accordance with the objectives that have been approved by Cabinet; to provide economic advice on matters relating to resource, transportation and general economic development in the North.

Northern Roads & Airstrips Division

Mackenzie Highway

In May 1972, the Prime Minister announced an accelerated construction program for the Mackenzie Highway from Fort Simpson to Inuvik. This involved the design and construction of about 665 miles of highway at an original cost of \$70 million in 1972. The latest estimated cost is \$300 million.

Construction

Section A from mile 297 (Fort Simpson) to 330 is essentially complete but the next 16 miles, 330–346, has had little work done on it. Section B, from miles 346 to 394, is under construction by Tompkins Construction. Work is progressing and the 1978 completion date is expected to be met or bettered.

Miles 395 to 411 was used as a training/operations section and has been constructed by Hire North. This section is now complete except for trimming and clean-up. Also, there is rock to blast in the Willowlake Hill. Plans have been made to extend the training/operations section from 411 to 425.

The section south of Inuvik, miles 964 to 931, was completed in 1973 and turned over to the NWT Government for maintenance.

Design

The last sections of final design have been submitted to the working groups and are awaiting approval.

The Inuvik-Tuk Section

Geotechnical work will be done in March and April 1976. Alignment has been done, but it is subject to change pending the outcome of the geotechnical surveys.

Hire North

Due to the announcement in mid-1975 that the Mackenzie Highway was to terminate at Wrigley for the time being, no major highway Right-of-Way (ROW) clearing work, which is a responsibility of Hire North, has been undertaken in the 1975–76 winter session. The highway has been cleared to mile 582 with the exception of the section from mile 425–440, part of which may still be undertaken in March and April 1976. In mid-1975, the original 16 mile training/operating section (M. 395–411) was extended an additional 15 miles from mile 410 to 425. From April 1975, to September 30, the Training Construction Section of Hire North maintained an average work force of 60 men – approximately 75 per cent native.

Due to inflationary problems, work on the training and construction operation was slowed-down in October 1975 and therefore, between October and December 1975 the work force was reduced to an average of about 30 people. The annual winter shut down period was for a two month period from December 1, 1975 to February 1976. On start-up it is intended that the total work force will be maintained at a level of approximately 60 persons, with 50 people on the job at any one time, the remaining being out on rotation.

Dene Mat

In February 1976, Dene Mat, a 51 per cent native owned co-op was awarded a gravel hauling contract on Section A of the Mackenzie Highway valued at approximately \$.25 million. During 1975–76 they have been awarded other gravel, house, water, and sewer contracts totalling approximately \$1.3 million.

Cost/Benefit Analysis

The Cost/Benefit Analysis of the Mackenzie Highway has been completed and published in two reports. Part I: Social Factors have been distributed and comments are being collected. Many of the recommendations concerning Hire North are currently being implemented. Part II: Environmental/Technical Factors is awaiting distribution to designated recipients.

Cutbacks

In August 1975, the Minister announced that construction of the Mackenzie Highway would terminate for the time being at Wrigley and is scheduled to be completed to there by 1979. The main reason for termination were rising costs on all highway projects plus the uncertainty of the construction of a gas pipeline.

The funds released from the Mackenzie Highway are being used to complete the Dempster and Carcross/Skagway Highways.

Fact-Finding Tour – New 10 Year Program

In September 1975, representatives of DIAND, DPW, MOT and both Territorial Governments toured the North meeting with and received briefs from, Chambers of Commerce and Mines, local Governments, northern communities and interested citizens in order to formulate a new 10 year roads policy 1975–85. The report of the Fact-Finding Committee should be available to the public early in March after approval has been received from the Minister. The new 10 year program should be submitted to Treasury Board in April 1976.

Dempster Highway

From mile 0 just south of Dawson, the system stretches 417 miles to a point where it joins the Mackenzie Highway some 33 miles south of Inuvik. When completed, this all-weather road network between the Mackenzie River Delta communities and Dawson in the Yukon will be the first all-weather direct link between the Yukon and NWT. It will also provide a low cost alternative to seasonal barge traffic. At the end of January 1976, 33 miles of the Dempster system had been completed, leaving approximately 83 miles for completion.

In 1973–74, a contract was awarded to Wiley Oilfields Hauling Ltd./Norm Keglovic Construction Ltd. joint venture for construction of a section from mile 178 to mile 237. This section of the highway, estimated to cost \$7,100,000 was scheduled for completion in 1974–75. However, because of adverse weather conditions and the use of shale rock to replace ordinary borrow materials in the subgrade, this project will not be completed until 1976–77.

Arrangements have been completed with the Department of National Defence for the construction of the Eagle River Bridge at mile 236. This project will have a total estimated cost of \$1,500,000. The steel for the sheet steel piling and for the bridge superstructure has been ordered. Field construction will commence in 1976 and continue through the winter months with completion scheduled for July 1977.

Tenders have been called for construction of the section between miles 27-265 closing date March 6. The remaining section miles 265-290 will be tendered in 1977-78 with completion scheduled for 1978-79.

In mid-1974, a contract was awarded to Keen Industries Ltd. for the construction of the subgrade from mile 290 (Yukon Territory/Northwest Territories border) to mile 344 (Fort McPherson). As of January 1976, the contractor had completed 50 per cent of the earthwork. The total cost is estimated to be \$6 million.

A contract for \$7,146,981 was awarded in 1973 to Western Construction for subgrade construction from mile 377 north to mile 417, the Dempster. In July 1975, an interim inspection was carried out on this section. Some deficiencies were noted and these have been corrected. The contract is now complete. Completion of the Dempster Highway is scheduled for 1978-79.

Carcross-Skagway Road

The Carcross-Skagway Road starts from point at mile 904.5 of the Alaska Highway and proceeds to Carcross, a distance of 35 miles. The section from Carcross to mile 47 was built to serve the Venus Mines. The section of the road from Venus Mines to the Yukon/BC border, a distance of approximately three miles, was completed in 1972 by DPW as a first step in linking the central Yukon Territory to the Pacific Ocean.

BC Section

On June 13, 1973, the Minister the Honourable Jean Chrétien, announced that the Federal Government would fund the completion of a 33.6 mile section of the highway through the Province of British Columbia.

Subgrade contract for the first 16 miles was awarded Ben Ginter Construction Ltd., Prince George, BC at an estimated cost of \$1,549,940. The contract is now complete. A contract for miles 66 to 85 (BC/Alaska Border) has been tendered, closing date March 9, 1976. There will be \$1.6 million spent this year of the total \$4.7 million estimate. It is scheduled for completion in 1978.

Cost-Sharing Roads

Provision is made in the Northern Roads Program for cost-shared roads required for exploration or development purposes. Assistance is available for the construction of low standard (tote trails), medium-standard (initial access roads), and high-standard roads (permanent access) to approved resource development projects. One application was received in 1975.

The Tote Trail Program was expanded to allow for other transportation modes which in some instances may be less expensive or more appropriate, including low standard airstrips, small docks, helicopter landing pads and seaplane bases. This program, which has been renamed, "Northern Exploration Facilities Program", will be administered by the Governments of the Yukon and Northwest Territories. Assistance under this Program may be up to 50 per cent of the cost of construction but will not exceed \$30,000 to any one recipient.

Northern Mineral Exploration Assistance

To encourage the direction of capital to northern ventures, the government introduced the Northern Mineral Exploration Program under which 40 per cent of all exploration costs of mineral, oil and gas may be recovered and are repayable only if, as a result of the discovery, production ensues. Since the inception of the program in 1967, 239 applications have been approved and a total of \$4,804,503 has been paid in grants, leaving an outstanding commitment of \$712,259.

Due to the government's fiscal restraints, the Northern Mineral Exploration Assistance Program will not receive additional funding in 1976-77. Accordingly, no new applications for assistance under the Program will be accepted after December 31, 1975.

Northern Natural Resources and Environment Branch

Forest Fire Management

Responsibilities

The aim of forest fire management is to protect life, property, timber resources and important game habitat areas from fire. This policy is intended to maintain forest fire damage at a level consistent with the present and future needs of the people to ensure the continuation of their enjoyment and use of the resources.

Review of 1975-76

In 1975, 166 fires were reported in the Yukon Territory. Despite the larger than normal number of fires, only 1,507 hectares (ha) of area were burned in the protected zones. An additional 35,791 ha of woodland and tundra burned in the unprotected area. The total area burned was well below the 12-year average of 11,000 ha.

One-hundred and one fires in the Yukon were attacked using airtankers, smokejumpers and/or ground crews. Some fires, in protected areas, were either permitted to run into natural barriers or were stopped by rain and did not require control action. The remaining 65 fires occurred in the unprotected zone and were not fought.

Of the 338 fires which were reported in the Northwest Territories, 200 fires were attacked using airtankers and/or ground crews. Although the majority of the fires were relatively small, three fires exceeded 50,000 hectares in size. The total area burned was 520,427 ha.

The training of key staff was continued by sending officers from both Lands and Forest Services to selected courses in Canada and the USA. Firefighter training sessions were conducted locally as in past years.

Airtankers were contracted and used effectively throughout the Yukon and in the Mackenzie District of the NWT. Two Douglas A 26's were used for initial attack and support action in the Yukon. Similarly, in the NWT a Douglas DC-6B, two A 26's and two Canso aircraft were used.

Fire prevention programs were conducted by officers of both the Yukon and Northwest Lands and Forest Services. School classroom visits helped to convey to children the importance of reducing fire occurrences. In addition, fuel management studies were initiated to develop methods of modifying forest fuels adjacent to communities which could become threatened by wildfire.

In the Yukon, enthusiastic smokejumpers contributed to the success of the firefighting operations and completed numerous improvement projects.

Plans for 1976-77

Smokejumpers will be introduced into the Northwest Territories, for the first time, increased use will be made of burning out techniques to minimize the cost of controlling large and potentially large fires, and planning will continue to develop fuel management techniques to safeguard communities in forest areas throughout the Yukon and Northwest Territories.

Forest Management

Responsibilities

To manage the forests of the North using sound recognized forest management practices in conjunction with essential environmental restraints.

Review of 1975-76

In both Territories increased attention has been given to the problem of forest renewal, as satisfactory regeneration is critical to the sustained manufacture of forest products and to a stable industry. As no applicable studies have been made, preliminary investigations into the matter have been started in co-operation with the Canadian Forestry Service at the Pacific Forest Research Centre in Victoria, BC, and at the Northern Forest Research Centre in Edmonton, Alberta.

Forest Industry and Timber Production

In the Yukon Territory, Watson Lake is the main centre of the forest industry. The largest mills are located in this area which contains the most productive forests in the Yukon. At present, there are 16 active mills located in the Territory. On the basis of annual productivity, ten mills produce less than 1,000,000 board feet, five produce between 1,000,000 and 5,000,000 and one produces over 5,000,000 board feet per year.

The total timber production during the fiscal year 1975-76 is estimated to be 3.9 million cubic feet, consisting of 2.7 million cubic feet of sawlogs, 0.4 million cubic feet of round timber and 0.8 million cubic feet of cordwood.

For comparison, the average cubic foot production by fiscal year for the five-year period from 1970-75 was 1.7 million of sawlogs, 0.65 million of cordwood and 0.24 million of round timber, totalling 2.6 million cubic feet.

In the Northwest Territories, the vicinity of Fort Smith remains the main area of timber production, although Fort Resolution appears to make substantial progress in utilizing the merchantable timber of the Lower Slave River. At present, there are 11 active mills located in the Territories.

The total timber production during the 1975-76 fiscal year is estimated to be 1.9 million cubic feet, consisting of 1.6 million cubic feet of sawlogs, 0.2 million cubic feet of fuelwood and 0.1 million cubic feet of round timber.

For comparison, the average cubic foot production by fiscal year for the five-year period from 1970-75 was 0.66 million of sawlogs, 0.18 million of fuelwood and 0.19 million of round timber, totalling 1.03 million cubic feet.

Plans for 1976-77

Plans include formal adoption of an interim forest policy, definite progress in planning an up-to-date forest inventory, and improving the timber data base for the area of the Lower Liard River, which is expected to play a significant role in the economic future of the Northwest Territories.

Long-term Plans

Long-term plans include commencement of a modern, continuing resource inventory as a basis for a comprehensive forest policy, improved legislation and up-to-date regulations. In view of the fact that improved management techniques will require an increase in staff and improvement of facilities, corresponding efforts will be made to secure adequate funding.

Land Administration

Responsibilities

Management of the disposal of surface rights to Crown lands in the Yukon and Northwest Territories, including allocations of lands for federal government programs, pursuant to the Territorial Lands Act and Territorial Lands Regulations.

Review of 1975-76

The total number of leases and sale agreements for both Territories exceed 500 in 1975-76.

Major policies were announced in January 1975 covering the disposition of territorial lands for cottage lots and agricultural purposes. The new policy pertaining to cottage lot subdivisions was designed to control haphazard development, conserve prime waterfront land and reduce speculation in Crown lands.

In October, the Department opened the first large subdivisions at Marsh Lake (61 lots) and Tagish Lake (66 lots) in the Yukon Territory. A smaller subdivision was also opened at Prelude Lake East (3 lots) in the Northwest Territories. Public response to these "lease only" program was strong and all lots were applied for within a very short period. During 1975-76 preparatory work continued at other subdivision sites in each Territory.

Increased public demand for large tracts of agricultural land and limited or non-existent data on soil and climatic potentials, lead to the temporary suspension of land dispositions for large scale agriculture announced in January 1975.

Over the next two years, the Department will conduct soil and climate surveys in the Territories and based on the results, develop new policies and disposal plans. In 1975-76 soil studies took place in the Liard River Valley, NWT and climate studies took place encompassing the southern Yukon and southwestern NWT. The program of transferring blocks of land and surrounding communities to the administration of the Governments of the Yukon and Northwest Territories, which began in 1970, continued in 1975-76 with the development of revised criteria. To date nine block land transfers have taken place in the Yukon and 15 in the Northwest Territories, encompassing a total of 1,519 square miles. This program is designed to enable the Territorial Governments to plan and control in close co-operation with the local councils, the development and growth of the communities in their respective jurisdictions.

Other highlights of 1975-76 included the introduction of computerized land records at Headquarters and the Regions; transfer of management and financial responsibility for the Whitehorse Land Titles Office to the Territorial Government; and the appointment of Mr. J. W. Over as an arbitrator to investigate and make recommendations on alleged grievances arising from the suspension of disposition of agricultural lands.

Plans for 1976-77

The cottage subdivision program will continue in both Territories during 1976-77. In the Yukon, capital works will be completed at Marsh and Tagish Lakes, a new subdivision on Teslin Lake (8 lots) will be started and preliminary plans for a 30-50 lot subdivision in the Haines Junction area will be prepared. In the Northwest Territories, subdivisions at Madeline Lake, Pickerel Lake and Whitebeach Point will be completed and preliminary study of other sites will continue. Climate surveys will be con-

tinued in both Territories and soil surveys will be extended to include the Yukon Territory. Blocks of land encompassing the communities of Resolute, Rankin Inlet, Pine Point and Tuktoyaktuk will be transferred to the Territorial Governments. Revisions to the Territorial Lands Regulations will commence and an agreement in principle will be reached on a land claims settlement in the Yukon.

Long-term Plans

The long-term plan is to classify all territorial lands in accordance with their highest and best use and to prepare comprehensive plans for their development and use based on a multiple land-use concept, these plans to be supported by amended statutes, regulations, policies and procedures as needed. This is necessarily a long range proposition because of the vastness of the area involved, therefore it is planned to undertake program selectivity each year toward fulfilment of the objective. At the same time, it is necessary to accommodate the land use requirements of current users of the lands. In the next two to three years, it is planned to open additional cottage subdivisions in both Territories for lease to the general public, to complete soil and climate surveys in both Territories and introduce new policies for the disposition of agricultural lands, to complete the program of transferring blocks of land in and around communities to the Territorial Governments, and to formalize land dispositions to natives resulting from a land claims settlement.

Land Use Management

Responsibilities

Control of the use of unalienated Crown lands in the Yukon and Northwest Territories and the protection of those lands from environmental damage as a result of use, pursuant to the Territorial Land Use Regulations.

Review of 1975-76

During the fiscal year 1975-76 more than 250 land use permits were issued, covering large scale activities in the Yukon and Northwest Territories, within the definition of a land use operation (as set out in the regulations). In each case, the environmental impact was assessed and appropriate operating conditions were written into the permit after which the work on the land was monitored as required. About 80 per cent of the land use operations were concerned with the search for oil and gas in the Mackenzie Valley and in parts of the Arctic islands. Such activities included staging camps, well drilling and seismic surveys. Mining and other development activities held permits for diamond drilling and other geophysical work, such as road and trail construction. Construction of roads and highways was a significant activity under permit by government agencies.

Consultations with both Territorial Councils and other agencies regarding amendments to the Territorial Land Use Regulations were completed and enactment is scheduled for May 1976. The amendments are designed to provide stricter environmental protection to all areas in the North, to facilitate administration and to improve communication with native people regarding exploration and development in areas of concern to them. The revisions include incorporation of the entire Yukon and Northwest Territories into the land management zones concept and implementation of a two permit system; one for larger operations requiring close control and one for smaller routine operations requiring lesser control.

In January 1976, the Department undertook a Granular Materials Inventory to obtain more detailed information on the location, quality, and quantity of granular resources in the Yukon and Northwest Territories. The results of the Inventory will be used to formulate a management plan for the development of this resource and to assess requests from industry and the communities for use of the granular material. This year's program of three selected sites in the Mackenzie Delta has been completed and the reports are being analysed.

Other highlights of 1975-76 include: a continued program of environmental clean-up along the Canol Road; the establishment of waste collection depots in the Territories; commencement of revisions to the Territorial Quarrying Regulations; monitored construction of the Mackenzie and Dempster Highways with regard to environmental concerns; transfer of the Land Use Section from Fort Smith, NWT to Yellowknife, NWT; and the appointment of a Land Use representative at Rankin Inlet, NWT.

Plans for 1976-77

Environmental clean-up and waste collection programs will be continued as will environmental monitoring programs. The new Territorial Land Use Regulations will be enacted and revisions to the Territorial Quarrying Regulations will be introduced. Enforcement of regulations will be tightened by improving field administration capability. Drilling and test programs for granular material resources will be conducted on the Yukon Coastal Plain. The Yukon Land Use and Resources Inventory will continue and a Land Use Study, Mackenzie Delta will commence.

Water Resources

Responsibilities

To conserve and manage the inland water resources of the Yukon and Northwest Territories and the arctic sea waters adjacent to the mainland and islands of the Canadian Arctic and to protect these waters from environmental damage resulting from use. The Division also controls the use of land and waters for hydropower developments on federal lands south of the 60th parallel. These responsibilities are carried out under the Northern Inland Waters Act, the Arctic Waters Pollution Prevention Act and the Dominion Water Power Act.

Review of 1975-76

During the year, the water resources staff was active with the water licencing program under the Northern Inland Waters Act and Regulations. Approximately 212 applications to use water were received with 176 authorizations and seven licences being issued. Four licences were for mining purposes, two were for municipal water use, and one was for water storage.

The Division co-operated on various planning projects for new hydropower developments with the Northern Canada Power Commission. The Commission has applied for water licences for construction of an additional generator capacity at their Whitehorse Rapids plant and a new development on the Snare River at Snare Cascades in the NWT. The Division staff continued to collect water and land rentals for the eight power developments licenced under the Dominion Water Power Act.

Throughout the year, the Division carried out numerous investigations and studies on various aspects of water uses, including groundwater and water quality monitoring. Advice was provided on matters pertaining to highways, pipelines, oil and mineral development and community water supply and disposal systems. For the benefit of existing and future water users, the water quantity surveys network was expanded on a cost-sharing basis with the Department of the Environment.

The Divisional staff continued to provide representation to many inter-departmental, international, federal-provincial and industry-related working groups. Through the year, staff participated in the development of mining effluent guidelines, plans for chemical and oil spills and water quality criteria for the Yukon and Northwest Territories.

Through the Arctic Waters Oil and Gas Advisory Committee, environmental and surveillance activities were conducted in connection with offshore oil and gas exploratory drilling.

Amendments were made in July to the Northern Inland Waters Regulations. The changes involved water use classification and authorization to use water without a licence. An amendment to the Act is expected in the early part of next year.

Plans for 1976-77

The licencing program under the Northern Inland Waters Act will continue to be very active. Over the year, many of the communities in the North should be licenced for municipal water supply and waste disposal. Plans for a large mining development at Strathcona Sound, NWT are presently being studied. The Divisional involvement in environmental and surveillance activities in connection with offshore drilling is expected to increase. The water quality and quantity networks will be expanded and improved. Hydro potential studies are planned for the Bathurst Inlet area.

Environment Division

Review of 1975-76

In 1975-76, 30 Land Use Information maps were prepared providing an update of two-thirds of the Mackenzie Valley sheets first published in 1972. Baseline data was collected for a further 16 maps covering the area north of Great Bear Lake and these sheets will be published in 1976-77.

The terrain sensitivity photomosaic coverage was extended to the following areas: Northwest Victoria Island; selected islands of the Queen Elizabeth group; the Grinnell Peninsula (Devon Island) and adjacent islands; Amund Ringnes and Cornwall Islands; Cornwallis and adjacent islands; north and central Prince of Wales Island and Somerset Island. Field evaluation of the photomosaics was tested on Banks Island and will be extended to Melville Island in 1976-77.

Three studies on the effects of terrain disturbance in the high Arctic were carried out in 1975-76 including the effects of surface disturbance on vegetation; the development of a computer model enabling prediction of the physical consequences of certain types of surface disturbance; and continuing systematic observation of existing disturbed sites.

Studies on fire ecology were continued in 1975-76 in order to obtain scientific information on the occurrence and biological effects of forest fires in the Northwest Territories with the objective of providing a scientific basis for management decisions on fire control. The results of these studies demonstrate that fire is a natural and essential factor in maintaining subarctic vegetation and terrain in its present state, and that successful suppression could produce considerable changes in vegetation and wildlife including a decline in caribou numbers. The studies suggest that available climatic and topographic information can provide a useful management tool in calculating optimum fire frequencies and areas of fires. Limited additional microclimatic studies will be carried out in 1976-77.

Investigations of the immediate and long-term effects of spilled crude oil on terrain, vegetation and soil and water fauna were continued in 1975-76 and monitoring of experimental spills will be continued. Studies of the effects of dissolved arsenic on fish survival and acidity associated with mine tailings disposal were also continued. A third volume of the bibliographic series *Ecology of the Canadian Arctic Archipelago* was published.

Environmental impact assessments of northern exploration and development activities, including offshore and onshore petroleum activity, mining developments and highway construction received greatly increased attention and will be emphasized even more during 1976-77.

Oil and Minerals Division

Oil and Gas

Responsibilities

The Oil and Gas Land and Exploration Section provides managerial services in respect of the government's proprietary interest in oil and gas, and to this end is responsible for the conduct of sales of oil and gas rights, the issuance of permits and leases, the maintenance of a registry of oil and gas rights, the surveillance of

royalty and other revenue functions, directly resulting from oil and gas operations, the economic and geological appraisal of individual parcels and the evaluation of the oil and gas potential in Canada north of 60°. It assesses exploratory programs for suitability to meet obligations to explore, receives and maintains technical data from exploration programs, maintains a library of exploration reports, and processes the geoscience data to provide information on potential reserves and land values, and to assist engineers of the Oil and Gas Drilling and Conservation Section in the solution of drilling, well control and production and conservation problems.

The Oil and Gas Drilling and Conservation Section is responsible for Departmental activities directed to the control of drilling and production techniques to protect against blowouts, whether polluting or simply wasteful, to ensure that reservoir depletion is carried out to ensure the maximum economic recovery of oil and gas, and its proper sharing between the various producers, and to ensure that all underground fluids not produced are confined to the strata in which they are found. It is responsible to ensure that timely recovery enhancement programs are instituted, and that adequate gas and oil treatment plants are built in accordance with good engineering practices. It is responsible for the prevention of pollution directly attributable to drilling and production operations, and for the safe gathering, storing, and transmission within the Territories of oil and gas and by products produced from Canada Lands in the Territories and adjacent offshore areas. It is responsible for the safe conduct in all aspects of drilling and producing operations in the harsh environment of northern Canada, and for the co-ordination of activities with those agencies responsible for activities peripheral to the immediate drilling and production operations.

Review of 1975-76

Oil and Gas Exploration

Expenditures by industry on oil and gas exploration in the Yukon Territory and Northwest Territories exceeded \$215 million in 1975, approximately a 14 per cent decrease from the previous year. Exploratory and development drilling decreased to \$160 million (down 11 per cent) while total geological and geophysical expenditures declined to \$55 million, a 20 per cent decrease from 1974.

On May 1, 1975 the Honourable Judd Buchanan announced that a new Management Regime would be established for Canada Oil and Gas Lands. Until the Management Regime is approved, no disposal of Crown Reserve Lands will be made. In July 1975, applications for exploratory permits for some 125,000,000 acres in the North were rejected by the Minister.

During 1975, the total number of permits and leases declined by some 7.4 per cent as a result of the maturing of permits and the evaluation of land holdings. Based on intensive drilling and assessment programs, some 20,000,000 acres in the Mackenzie Delta and Arctic Islands were allowed to remain in permit under the discretionary renewal provision of the Regulations.

A total of 57 seismic crew months, concentrated in the Mackenzie Delta and Arctic Islands, were reported. Detailed seismic work was carried out by Imperial Oil, Gulf Oil, and Shell Oil, among others, in the Mackenzie Delta/Beaufort Sea areas. There were no land participation surveys in 1975. In the Arctic islands, major seismic programs were continued by Panarctic on Prince Patrick and Melville Islands, and by Sun, operating on behalf of the Arctic Islands Offshore Group, on ice in the inter-island areas, using conventional land seismic techniques.

Marine seismic surveys were carried out in the Lancaster Sound area by Norlands, and in the inter-island area by Sun Oil on behalf of the Arctic Islands Offshore Group. In Baffin Bay-Davis Strait, programs were carried out by Imperial

Oil, Canada-Cities Service, Shell Oil, and Gulf Oil, and participation programs were carried out by Eureka Exploration and Geophysical Services Inc.

Drilling operations were concentrated in two areas: the Mackenzie Delta-Tuk areas, and the Arctic Islands, specifically in the Sverdrup Basin. Imperial Oil and Sunoco drilled wells on man-made islands in the Beaufort Sea during the current year. One well, Sun Garry P-04, recovered significant amounts of oil and gas. Off-setting wells will be drilled to test several prospective horizons which may contain hydrocarbons. Approvals in principle were given in 1974 to proposals for drilling from floating vessels in offshore locations in the Beaufort Sea. Canadian Marine Drilling is now proceeding with construction of the offshore drilling units. Two more drilling proposals are being evaluated by drilling engineers and by environmental management officials.

Gas discoveries were made in the Mackenzie Delta by Shell at Kumak K-16 and by Sun at Garry P-04. In the Arctic Islands, gas was recovered by Panarctic at Drake D-73, East Drake I-55, East Hecla C-32, and West Hecla P-62.

Oil was discovered in the Mackenzie Delta by Sun at Garry P-04, and in the Arctic Islands by Panarctic at Bent Horn F-72A on Cameron Island.

Large-scale environmental and ecological studies were completed by the Arctic Petroleum Operators Association as a prerequisite to offshore drilling in the Beaufort Sea. The application to construct a Mackenzie Valley Gas Pipeline was made in early 1974. Through the Polar Gas Project, Panarctic Oils Limited and others both continued feasibility studies on the gas pipelines from the Arctic islands to the mainland. Two possible routes were investigated by Panarctic Oils Limited. Both would cross Barrow Strait, one to proceed south along the west side of Hudson Bay, and the other along the east side of Hudson Bay.

Plans for the 1976 drilling operations from ice-reinforced, floating drillships in the Beaufort Sea progressed well. Construction of two drillships for Canadian Marine Drilling (CanMar) and the necessary support craft was underway in preparation for the 1976 summer program. CanMar also carried out a summer program of seabed sampling at the two proposed drilling locations using barge mounted equipment.

In 1976, marine seismic programs are proposed for the interland-island areas in the Arctic and in the Baffin and Davis Straits. A three-year seismic program operated by Sunoco and costing over \$40 million will be continued in the Arctic Islands. The program, utilizing four conventional seismic crews and a marine seismic vessel during the summer, will gather seismic data over all the Arctic Islands. A continuation of wildcat and development drilling in the Delta by the major companies, and the drilling of the two offshore wells in the Beaufort Sea, may maintain the same level of exploration activity in the two areas.

Exploration activity will be minimal in the Yukon Territory and in areas south of Norman Wells. However, because of the cost of the two offshore wells, estimated at \$30 million each, exploratory costs should show an increase from 1975 levels.

Oil and Gas Production

The Norman Wells Oil Field, lying in the west central part of the NWT had 59 oil wells capable of production and 33 producing regularly. Gross field production during 1975 averaged 2,944 BOPD plus 5.5 MMCF/D of gas, for a yearly total of 1,074,713 bbls. of oil and 2,027 Bcf of gas.

Six gas wells, at Pointed Mountain Gas Field, NWT; Pan Am Pointed Mountain K-45, P-53, O-46, G-62, F-38, and A-55 (in grid area 60-30-123-45) produced at a combined gross average rate of 84.7 MMCF/D plus 324 BWPD for a yearly total of 33,100 Bcf and 120,000 bbls. of water.

The Beaver River Gas Field straddles the Yukon-BC border with one well, Pan Am Beaver River YT G-01-60-10-124-15 in the Yukon portion of the field. Production taken from the Pan Am Beaver River YT G-01 well (Mississippian Pool) during 1975 was 5.4 MMCF/D for a total of 1,975 Bcf of gas. Under a royalty sharing agreement between the Government of BC and the Government of Canada, seven per cent of the production from the Nahanni Pool or 0.768 Bcf was assigned to the Yukon portion of the field for 1975.

Number of Permits and Leases, and Relevant Acreage, 31 December 1975

| (Area) | (Permits) | (Acreage) |
|---------------------|-----------|-----------|
| NWT mainland | 1,493 | 67,040.7 |
| Yukon mainland | 416 | 17,849.6 |
| Arctic Islands | 4,610 | 222,206.6 |
| Arctic coast marine | 1,075 | 51,796.1 |
| Total | 7,594 | 358,893.1 |

| (Area) | (Leases) | (Acreage) |
|---------------------|----------|-----------|
| NWT mainland | 555 | 3,319.5 |
| Yukon mainland | 69 | 309.4 |
| Arctic Islands | Nil | |
| Arctic coast marine | Nil | |
| Total | 624 | 3,628.9 |
| Grand total | | 362,522.0 |

Revenues Received, 1975-76

| (Yukon Territory) | (Revenues) |
|-------------------|--------------|
| Permit fees | |
| Transfer Fees | \$ 3,635.00 |
| Lease fees | 90.00 |
| Rentals | 184,243.00 |
| Forfeiture | |
| Bonus | |
| Royalties | 196,230.00 |
| Total | \$384,202.00 |

| (Northwest Territories) | (Revenues) |
|-------------------------|----------------|
| Licence fees | \$ 1,320.00 |
| Permit fees | |
| Transfer fees | 8,950.00 |
| Lease fees | 4,040.00 |
| Rentals | 3,718,493.00 |
| Forfeiture | 165,710.00 |
| Bonus | |
| Misc. | 1,437.50 |
| Royalties | 3,744,554.00 |
| Total | \$7,644,513.50 |
| Total for Territories | \$8,028,716.50 |

Mining Section

Responsibilities

This section is responsible for the administration of mining and mineral rights (including oil and gas) from the time a claim is acquired to the production stage, including safety in mines. The section comprises three units – Mining Lands, Exploration and Geological Services, and Engineering and Inspection Services. The responsibility for these operations rests with the Administrator of Mining.

Mining Lands Unit

For administrative purposes, the territories have been divided into seven mining districts. A mining recording staff is responsible for the disposition of mineral rights within each district in accordance with the applicable legislation. For each territory, there is a Supervising Mining Recorder whose principal function is to ensure that uniform practices are observed in the administration of the various mining acts and regulations.

Engineering and Inspection Services Unit

Headed by the Chief Mining Engineer who is stationed in Ottawa, this unit is responsible for the implementation of the Mining Safety Ordinances and Mining Safety Rules and Regulations in mines as well as the Blasting Ordinance and Regulations in the Yukon and the Explosives Ordinance in the Northwest Territories. It is responsible for amendments and the preparation of new safety legislation when required, for maintenance of mine rescue stations and rescue equipment in both territories, and for the training of mine rescue teams.

A Regional Mining Engineer is stationed at Whitehorse in the Yukon and at Yellowknife in the Northwest Territories. He is the senior mining engineer with a staff which includes a District Engineer, Electrical-Mechanical Engineer, Environmental Engineer, Mine Rescue Superintendent, Claim Inspector and clerical staff who are responsible for:

- inspection of mines, quarries and blasting operations to ensure compliance with safety legislation;
- inspection of mineral claims to ensure compliance with the Yukon Quartz Mining Act, the Yukon Placer Mining Act and the Northwest Territories Canada Mining Regulations;
- ensuring that sufficient mine personnel are trained in mine rescue, recovery operations and first aid;
- conducting ventilation and dust surveys, monitoring radioactive contamination, and carrying out environmental studies of all underground and surface mining properties.

Exploration and Geological Services

This unit provides a geological information and advisory service to the mineral industry in the northern territories. Regional Geologists' offices are maintained at Whitehorse, Yukon and Yellowknife, Northwest Territories.

Two core libraries, the H. S. Bostock library at Whitehorse and the C. S. Lord library at Yellowknife, provide means for preserving valuable diamond drill core data for the mineral industry. Each has laboratory facilities for core splitting, diamond-saw cutting, thin-section preparation and core storage.

In co-operation with the Geological Survey of Canada, the Yukon Chamber of Mines and the Northwest Territories Chamber of Mines, geoscience forums were held in the fall of 1975 at Whitehorse and Yellowknife. Well attended by the mining and exploration communities, these meetings will be held on an annual basis.

Regional and District Geologists carry out mineral property examinations, collect rocks and mineral specimens and advise the mineral industry, government departments and research scientists on geological problems arising from their work in the Territories. The service includes carrying out geological evaluations on mining developments in the Yukon and Northwest Territories whenever government assistance is requested.

Department geologists assist prospectors and other geologists in identifying rock and mineral specimens by giving prospector training courses, in preparing geological compilation maps on mineralized areas and giving direction when requested.

Review of 1975–76

Yukon Territory

Mining Production

The value of mining production sales in the Yukon increased by 33 per cent from \$171,348,288 to \$228,659,000 in 1975. Production came from five mines which produced lead, zinc, copper, silver, cadmium, gold, asbestos and coal. Gold, copper and cadmium production were down but all others were up, especially lead and zinc which accounted for 66 per cent of the total value of production.

There were 1,355 persons employed by the producing mines in 1975, an increase of 79 persons over the 1974 figure.

Cyprus Anvil Mining Corporation (Lead-Zinc-Silver) – Cyprus Anvil produced lead, zinc and silver from its open-pit mine which is now approximately 500 feet deep. The Yukon's largest producer began a new drilling program to explore for mineralization at depth on its property in light of the Kerr Addison-A.E.X. Minerals discovery.

United Keno Hill Mines Ltd. (Silver-Lead-Zinc-Cadmium) – United Keno Hill produced ore from six mines; Husky, No Cash, Townsite, Keno, Elsa and Dixie. Reserves were down but new reserves have been found in the Elsa mine.

Whitehorse Copper Mines Ltd. (Copper) – Whitehorse Copper continued to mine ore from the Little Chief orebody using underground methods. The milling rate increased during the year, however the grade was lower than in 1974. Ore reserve tonnage showed a decrease but the grade was increased to 2.33 per cent copper.

Cassiar Asbestos Corporation Ltd. (Asbestos) – Cassiar Asbestos had its most production year in 1975, since the Clinton mine began production in 1974, with fibre production estimated at 112,000 tons. This is a 24 per cent increase over the 1974 production and a 10 per cent increase over the previous record year of 1972 when 101,888 tons of fibre were produced.

Tantalus Butte Coal Co. (Coal) – Tantalus Butte increased its rate of production from 70 tons per day in 1974 to 100 tons per day in 1975. This reflects the increased lead and zinc production of Cyprus Anvil, the parent company, who use the coal to dry the concentrates.

Developing Properties

An underground development – exploration program was carried out at the Kerr Addison-A.E.X. Grum property five miles north-east of Faro. The program consisted of driving a decline, cross cutting, raising and drifting in the ore in preparation for bulk sampling and diamond drilling. The underground work commenced in March and by years end, 4,800 feet of lateral openings, 427 feet of raising and 1,900 feet of diamond drilling was completed. In addition to the underground drilling, 63,000 feet of drilling was completed from surface. At the end of the year underground work was continuing. The limits of the deposit are as yet undefined but so far it is thought to contain more than 30 million tons with a grade of more than 10 per cent lead-zinc and nearly two ounces per ton silver.

Mineral Exploration

Mining companies were active in the Yukon in 1975. The number of quartz claims staked in 1975 declined by 36.7 per cent to 8,569 although the claims in good standing rose to 35,699 and exploratory work on mineral claims continued at a high rate.

Lead-Zinc-Silver

Whitehorse District – In the Anvil Range Cyprus Anvil Mining Corp. commenced a program of deep drilling and geophysical surveys in the vicinity of its FARO orebody, a gravity survey on the nearby LISA claims, and conducted a soil geochemical survey on its NOR claims. Cyprus Anvil also completed a program of geophysical surveys and diamond drilling on their DANA, HALO and IRMA claims.

United Keno Hill Mines Ltd. conducted geological mapping and a geochemical survey on their ABI claims.

The El Paso Mining and Milling Co. Ltd. did geological mapping, soil and rock geochemistry, and a VLF-EM survey on its SM claims.

Watson Lake District – Ogilvie Joint Venture carried out a geological examination and a soil geochemical survey of its BOB claims.

Tintina Silver Mines Ltd. completed a program of geological mapping, soil sampling, and magnetic and electro-magnetic surveys on the EAGLE claims.

Empire Metals Corp. and Texasgulf Inc. carried out a geochemical survey on the PELLY claims.

Hudson's Bay Exploration and Development Co. Ltd. conducted soil sampling, and I.P. survey, and did some diamond drilling on a skarn-type showing on its ANGIE claims. In the Mine Creek area, the company carried out EM and magnetic surveys and diamond drilling on the BEV claims. On the BINGY claims it conducted soil and silt geochemical surveys as well as magnetic and EM surveys.

In the Watson Lake area, Noranda Exploration Co. Ltd. completed an extensive program of geochemical and geophysical surveys as well as 8,400 feet of diamond drilling on its McMillan Property. To date, at least one million tons of lead-zinc massive sulphides in argillite have been outlined. Nearby, the Hyland Joint Venture carried out a detailed gravity survey and did some diamond drilling on their PORKER claims. Granby Mining Corp. have outlined 3 million tons of 8 per cent combined lead-zinc by diamond drilling on the MEL, JEAN and WET claims.

In the Summit Lake area of the Selwyn Mountains, Canex Placer Ltd. continued exploration on its Howard's Pass property with detailed geological mapping and trenching in addition to diamond drilling.

Welcome North Mines Ltd. carried out detailed geochemical soil survey on the KATE claim in the shales of the Road River Formation.

Mayo District – Exploration activity in the Mayo Mining District was concentrated in the Bonnet Plume area 120 miles north-east of Mayo. This was mostly follow-up work to the discoveries of 1973 and 1974 in the Corn Creek, Goz Creek, Harrison Creek and Dolores Creek areas, though some staking activity continued. Most of the lead-zinc deposits occur in dolomite of Upper Hadrnyian and Lower Cambrian age.

Archer, Cathro and Associates Ltd. carried out diamond drilling on the FLU claims and geological mapping and geochemical sampling on the AL group. The company also staked several other claim groups in the general area.

Action Resources Ltd. conducted diamond drilling and trenching on the PAL, GAL, ANN, GIN, ZOG and CVO claims in the Goz Creek area.

Amex Explorations Inc. had geological mapping and geochemical soil sampling done on the DTG claims in the Dolores Creek area and on the DOC claims in the Mount Profit area.

Barrier Reef Resources Ltd. carried out other diamond drilling on its Goz Creek property and staked on the nearby BH claims. Drilling to date has outlined approximately 12 million tons of eight per cent zinc.

Bow River Resources Ltd., Highhawk Mines Ltd. and Cominco Ltd. carried out an extensive program of geological mapping, geochemical sampling, geophysical surveys, trenching and diamond drilling on the PING property in the Corn Creek area. In addition, a soil geochemical survey was conducted over the PING claims by Bow River Resources and Highhawk Mines.

Brinex Ltd. conducted geological mapping, geochemical soil survey and trenching on its Harrison Creek property. Canonex Resources Ltd. and Canorex Developments Ltd. did geological mapping and geochemical sampling on the BAR claims.

Cominco Ltd. conducted an IP survey and carried out geological mapping on the BOB claims. In conjunction with Alkon Revenue Mines Ltd. diamond drilling and geophysical surveys were conducted on the FUN claims; with Canwest Exploration Ltd. detailed geological mapping, a geochemical soil survey, and IP survey and diamond drilling were done on the DF claims; with Spectroair Explorations Ltd., diamond drilling was done on the DEA claims.

Cordilleran Engineering did work on the BID, RYE, BOB, GEP, KIS, GYP, and RY claims with included geological mapping, geochemical surveys and diamond drilling.

Cyprus Anvil Mining Corp. conducted a geochemical soil survey on the CLOE and ALE claims, geological mapping and geochemical surveys on the VUG and ALL claims and diamond drilling on the TGO, BUD and CON claims.

Great Plains Development Co. of Canada Ltd. carried out detailed geological mapping and some geochemical soil surveys on the BEV, LAURA, BUH, JANETTE, KEN WINDY, YUK, BEN, and YGI claims and staked the SLATS claims.

Harman Management Ltd. conducted detailed geological mapping on the GYR, EC and ADD claims.

McIntyre Mines Ltd. completed a major program of geological mapping, geochemical sampling, and diamond drilling on the MOM, ODD, TOM, RARA and KIDD claims.

United Keno Hill Mines Ltd. did diamond drilling on its CASE claims in the Keno Hill area.

Ogilvie Joint Venture conducted geological mapping, geochemical surveys, and a gravity survey as well as some diamond drilling on the JASON claims in the McMillan Pass area.

Dawson District – Hudson Bay Exploration and Development Co. Ltd. conducted geological mapping and geochemical soil sampling in the OG, KIM and DEM claims. The OG had additional work done in the form of an IP survey and diamond drilling. Mineralization is in a Proterozoic dolomite unit.

Cyprus Anvil Mining Corp. did geological mapping and soil geochemical surveys on the HOT, KIWI, OZ, UG and TART claims. In addition, diamond drilling was done on the OZ and TART claims.

Amoco Canada Petroleum Ltd. mapped and performed geochemical surveys on the DOLL, LLOD, VIT and ML claims in the southern part of the Richardson Mountains. The mineralization consists of galena and sphalerite in limestone breccias.

Amax Exploration Inc. conducted geochemical surveys and geological mapping on its Doll Creek South and North properties, also in the southern part of the Richardson Mountains.

Union Minière Explorations and Mining Corp. Ltd. conducted geochemical surveys on the OD and KEPT claims.

Copper

Whitehorse District – On the Whitehorse Copper Belt, Whitehorse Copper Mines Ltd. carried out surface exploration on several properties. Diamond drilling was conducted on the VALERIE, NORTH STAR and COWLEY PARK properties and

I.P. and magnetic survey were run on the WE claims. Whitehorse Copper also did 1,400 feet of diamond drilling on the Kreft-Takacs property on Jackson Creek. Mineralization in the Copper Belt consists of bornite and chalcopyrite in skarns developed at the contact of limestone and granite intrusions of the Coast Range complex.

United Keno Hill Mines Ltd. conducted geological mapping and geochemical surveys on the GEE and HIG claims. Molybdenite was also found in a grey granodiorite on the HIG group.

Amoco Canada Petroleum Co. Ltd. conducted I.P. surveys on the PATT, CC, and DOYLE claims where copper and molybdenum sulphides were detected in altered felsic intrusives.

The D.C. Syndicate carried out a geological, geochemical and geophysical survey on the BAND claims which occur in a skarn environment; geological mapping and a soil survey were carried out on the BOND and LORI claims where there are copper-molybdenum showings in granodiorite.

Envoy Resources Ltd. did geological mapping and soil geochemistry on the ENC claims.

Cyprus Anvil Mining Corp. carried out I.P., magnetic and soil geochemistry surveys on the AU and AG claims on Mt. Freegold.

Brascan Resources Ltd. investigated a copper showing in volcanics on the M claims at the base of the Kluane Mountains by geological mapping and trenching.

Western Mines Ltd. completed a diamond drilling program totalling over 5,000 feet on the CAR claims southeast of Prospector Mountain. Weak copper and molybdenum mineralization in porphyry-type environment was encountered.

Mayo District – Cyprus Anvil Mining Corp. carried out a preliminary geochemical soil survey on the GREMLIN claims which contained a showing of vein and disseminated copper mineralization in clastic rocks.

Dawson District – Rio Tinto Exploration Ltd. conducted geophysical and geochemical surveys and did geological mapping and diamond drilling on the Lucky Joe property. Chalcopyrite and molybdenite occur disseminated in fractures in schists of the Yukon group metasediments.

Kerr Addison Mines Ltd. carried out an I.P. survey and diamond drilling on the WON claims north of Fort Selkirk.

Gold

Whitehorse District – In the Moosehorn Range area near the Alaska border Claymore Resources Ltd. discovered quartz veins containing visible gold on the LORI group of claims and conducted a program of geochemical and geophysical surveys, trenching and diamond drilling. A program of rotary drilling was also completed to ascertain the potential of placer deposits in the overburden. Great Bear Mining Co. Ltd. did trenching and diamond drilling on the nearby DEA claim group.

D.C. Syndicate discovered gold in a rhyolite dyke and did geological mapping and geochemical surveys on the GEM claims. On the PANTHER claims a program of geological mapping and geochemical soil sampling was carried out and on their RAINBOW claims a series of trenches were cut across a shear zone in granite.

Mt. Nansen Mines Ltd. re-opened the old Heustis Mine with a program of underground rehabilitation in order to re-evaluate the orebody.

Rayrock Mines Ltd. drilled 7,800 feet of core on the LA FORMA property, where an extension to the original gold-silver vein structure was located. During this work, a new porphyry type occurrence was discovered on the eastern part of the property.

Tungsten

Watson Lake District – Union Carbide of Canada Ltd. conducted a program of detailed geological mapping, soil sampling, magnetic and electromagnetic surveys, trenching and drilling of two short diamond drill holes on the FELIX claims. The company also carried out a program of geological mapping, geophysical surveys and diamond drilling on a skarn deposit on the SUSAN claims.

Canada Tungsten Ltd. had a program of diamond drilling on a skarn deposit on the BAILEY claims.

Mayo District – Union Carbide Mining Limited carried out an extensive program of geological mapping, geochemical and geophysical surveys and diamond drilling on the Mt. Armstrong property consisting of the TONGUE, CHEEK, TONSIL, and NOSTRIL claims.

Barite

Watson Lake District – C. Smith carried out geological mapping, geophysical surveys and did some diamond drilling on the GARY and JASON claims for bedded barite in Upper Devonian shales.

Mayo District – Baroid of Canada staked the CATHY and LORRAINE claims in the Hess Mountains. Work included geological mapping and beneficiation tests. Welcome North Mines Ltd. staked the TEA claims in the nearby area and conducted geological mapping and a soil geochemical survey.

Iron

Dawson District – Welcome North Mines Ltd. and Bethlehem Copper Corp. Ltd. conducted preliminary geological mapping and did some bedrock chip sampling on their DELTA and DAWN claims. Metallurgical tests were performed. The mineralization consists of fine-grained quartz-siderite iron formation. In addition, museum type specimens of the phosphate gem mineral, lazulite, also occur within the deposit.

Northwest Territories

Mining Production

Production came from seven mines producing lead, zinc, copper, gold, silver and tungsten. The value of mineral sales for the NWT was down 15 per cent from \$214,346,225 in 1974 to \$181,787,000. Mineral production was down with the exception of gold which showed an increase in production over 1974. Lead and zinc accounted for 77.5 per cent of the value of production in 1975.

There were 1,583 people employed by the producing mines in 1975, an increase of 210 persons over the 1974 figure.

Pine Point Mines Ltd. (Lead-Zinc) – Pine Point Mines Ltd., the only lead-zinc producer in the Territories geared output to current restricted market conditions producing approximately 19 per cent less metal than in 1974. Production from new deposits on the property increase the average hauling distance from the deposits to the mill, additional equipment and larger crews were necessary resulting in an increase in the mine staff of 60 employees over the 1974 figures.

Cominco Ltd.: Con-Rycon-Vol Mines (Gold) – The new Robertson Shaft was nearing completion by Year's end having reached the 4,335 foot level. Completion of the 5,800 foot shaft is expected in early 1976.

Giant Yellowknife Mines Ltd. (Gold) – Production came from underground (Giant, Supercrest and Lolor mines) and from an open-pit near the south end of the property. The grade of ore being mined is slightly lower than in 1974.

Echo Bay Mines Ltd. (Silver-Copper) – Mining production came from the upper levels of the Echo Bay mine while the old Eldorado mine shaft was dewatered. Drilling for silver ore was carried out in the tope levels of the Eldorado mine.

Arctic Mining and Exploration Ltd. (Silver-Copper) – The company has extended its decline haulageway to the 800 foot level to allow development of the Nos. 10 and 11 veins at depth. The most significant exploration development was the discovery of the No. 13 vein on the 500 foot level.

Canada Tungsten Mining Corporation Ltd. (Tungsten) – The E zone orebody has supplied all of the mill feed since mid-June but the presence of a tale-like material and high silica content in the ore caused milling problems which lowered the recovery rate. Towards the latter part of the year the recovery rate improved. The copper was recovered in 1975.

Hope Bay Mines Ltd. (Silver) – Hope Bay produced approximately 11,000 ounces of silver in 1,176 lbs. of concentrate. The mill processed up to 30 tons of ore per day with an average of 23 tons per day over a milling period of 33 days. Mining was carried out from June till early September. The ore came from the lens which supplied the ore in 1974 but the grade was lower in 1975. The company continued to explore targets on its property in the hope of finding new ore.

Developing Properties

Ennisivik Mines Ltd. continued construction of the townsite, wharf and mine facilities. Exploration and mine development was carried out with an expected completion date in the fall of 1976. The first shipment of concentrates from the mine, 18 per cent owned by the Federal Government, will be exported during the 1977 shipping season.

Cominco Ltd. and **Bankeno Mines Ltd.** postponed their decision to bring the deposit of Arvik Mines Ltd. on Little Cornwallis Island into production. The company expects to make a decision in 1976.

Mineral Exploration

Mineral exploration in the Northwest Territories has steadily increased. In 1975, 22,811 claims were staked, an increase of nearly 82 per cent, and exploration expenditures probably exceed 25 million dollars, an increase of 39 per cent over the 18 million dollars spent in 1974.

Lead-Zinc

Keewatin District – Noranda Exploration Company Ltd. flew a geophysical survey in the Kaminak-Quartzite Lake area in early spring. Three holes were drilled, two on anomalies on the north shore of Kaminak Lake and one on an anomaly southwest of Heninga Lake. Geological and ground geophysical surveys covered anomalies detected by the airborne survey and the favourable ones were staked. Geochemical sampling along the shore of Kenik Lake and reconnaissance geology of the small greestone belt south of Yathkyed Lake were also undertaken.

U.S. Steel Western Hemisphere Ltd. contracted reconnaissance geological, geochemical and ground geophysical surveys of anomalies detected in 1964–70 by Pennarroya Ltee's surveys in the Turguetil-Kaminak-Quartzite Lakes area. Promising areas were staked.

Hudson Bay Exploration and Development Company Ltd. did airborne magnetometer and E.M. surveys on prospecting permit areas south of Heninga Lake. Interesting anomalies were staked and tested by ground geophysics and prospecting. Two holes were drilled on anomalies northeast of Kaminak Lake at the end of the season.

Cominco Ltd. geologists mapped the SPI claims south of Spi Lake and reconnoitered the greestone belt in the Heninga-Kaminak Lakes area.

St. Joseph Explorations Ltd. drilled nine holes on the east, west and down-dip extensions of a massive silver-zinc-copper showing drilled in 1974 by Gemex Mineral Inc. on Heninga Lake. Part of the area tested by ground geophysics and geological surveys.

Aquitaine Company of Canada Ltd. drilled 14 holes on geophysical anomalies detected by its 1973 airborne survey in the Dawson Inlet area. Ground geophysical surveys tested anomalies detected in 1974 in the Naguse Lake-McConnell River prospecting permit. One geologist spent a few days studying Aquitaine's holdings north of Baker Lake.

Cominco Ltd. did ground geophysics and prospecting in the Hayes River area.

Arctic Islands – **Cominco Ltd.** drilled a lead-zinc showing on Dundas Island, had one small geological crew on the Sheills Peninsula of northwest Devon Island and one on the Brodeur Peninsula of northwest Baffin Island.

Canadian Superior Exploration Ltd. continued drilling, prospecting and mapping areas of lead-zinc potential in the Thumb Mountain Formation on Cornwallis Island.

Trigg, Woollett and Associates Ltd. conducted reconnaissance geochemical exploration on Northern Baffin Island.

Mackenzie District – A number of companies flew extensive EM and magnetic surveys over parts of the northern Slave Province which led to extensive staking and some ground follow-up.

Cominco Ltd. explored throughout the northern Mackenzie Mining District, including at Bathurst Norsemes drilling on the Boot Lake, JO and A zones where several good grade intersections were reported and large diameter core was obtained from the A zone for mill tests. On the RUN group near the Arctic coast 3,000 feet was drilled, and geological mapping and geophysics covered a large claim block. A soil sampling follow-up of a lake sediment anomaly in the Indian Lake area gave negative results.

Great Plains Development Company of Canada Ltd. did extensive helicopter-supported geological reconnaissance north of Muskox Lake and west of the Back River, a geological evaluation of a galena vein on an island in Bathurst Inlet and geological mapping on Permit 316 south of High Lake.

Noranda Exploration Ltd., after airborne EM and magnetic surveys, staked numbers of claim blocks on Archean volcanic belts in the Northern Slave Province, particularly in the High Lake area where some work was done in a joint venture with Great Plains Development Company. Ground EM and magnetometer surveys, soil and rock geochemistry and geological mapping tested favourable ground. A geophysical target was drilled on the HAWK and BLUE claims east of Takijug Lake and ground geophysics and geological mapping followed AEM on claim groups in the Beechey Lake area.

Kennco Exploration (Canada) Ltd. did EM magnetometer and geological surveys on five claim groups near their High Lake deposit and drilled 2,000 feet on the HOLE and BLEW groups.

Brascan Resources Ltd. and Conwest Exploration Co. Ltd. drilled some 2,000 feet on the YAVA deposit at Agricola Lake in the Hackett River-Beechey Lake volcanic belt, and approximately 2,000 feet on other targets. Airborne and ground geophysical, and detailed geological surveys involved five geologists.

Great Plains Development Company of Canada Ltd. conducted ground EM and magnetometer surveys in the Indian Mountain Lake area locating conductors with associated magnetic highs.

Bayrock Mines Ltd. drilled 924 feet in five holes on a lead-zinc prospect on Keith Island in the East Arm of Great Slave Lake.

Western Mines Ltd. fence drilled on 1,300 claims acquired west of Pine Point Mines Ltd.'s property.

Pine Point Mines Ltd. drilled approximately the same exploration footage on its property as in 1974.

Pine Point Mines Ltd. drilled for lead-zinc in Paleozoic carbonates at Windy Point on Great Slave Lake.

Nahanni District – Giant Yellowknife Mines Ltd. diamond drilled geochemical anomalies, outlined in 1973–74, on its prospecting permit areas.

Cadillac Exploration Ltd. extended the third level adit on the No. three zone of the Prairie Creek deposit. Noranda Exploration Company Ltd. did a preliminary evaluation of the deposit but have not optioned the property.

Cominco Ltd. completed reconnaissance mapping and prospecting of its permit areas in the Mackenzie Mountains. Detailed geological mapping, prospecting and diamond drilling on the SB claims apparently gave encouraging results. Detailed geological mapping and minor trenching tested lead-zinc occurrences in the carbonates of the Sunblood Formation on the MA claims.

Canex Placer Ltd. and U.S. Steel Western Hemisphere Ltd. geologically mapped and drilled 13 holes to outline the shale hosted lead-zinc deposit near Howard's Pass.

Welcome North Mines Ltd. conducted regional exploration for carbonate hosted lead-zinc deposits, and detailed stratigraphic work on the Sekwi Formation. The company prospected several areas and staked the REV claims mid-way through the season to cover a high grade zinc showing which was drilled in September.

Hammon Management Ltd. explored part of the Sekwi Formation for lead-zinc deposits and several new occurrences were staked in the Palmer Lake region.

Serem Ltd. did regional mapping and prospecting in the Sekwi Formation and detailed mapping, prospecting and diamond drilling on the TICK claims.

International Nickel Co. of Canada Ltd. appraised the geology of the Godlin Lakes and Keele River regions.

Cordilleran Engineering Ltd. conducted a regional geochemical survey in the Proterozoic sediments of the Redstone River area. Geological mapping, prospecting and diamond drilling tested the lead-zinc mineralization in solution-syneresis breccias on the Gayna River property.

Copper

Mackenzie District – Dupont of Canada Ltd. flew EM magnetic surveys over extensive felsic and intermediate volcanics north of Muskox Lake and west of the Back River: the company staked many claims and did some group follow-up. Dupont is in partnership with Shell Canada Ltd. in this project.

Long Lac Mineral Exploration Ltd. explored Permits 336 and 337 north and northeast of Contwoyto Lake with AEM and geological surveys on both permits and geological mapping, ground geophysics and soil geochemistry on anomalies.

Ecostall Mining Ltd. (Texasgulf Canada Ltd.) drilled near its copper-zinc deposit west of Takijug Lake and on their new discoveries near Itchen Lake where several million tons of mineralization has been drilled indicated in one of three mineral zones. Geological, geochemical and geophysical surveying tested ground in these areas and elsewhere along the Takijug-Point Lake volcanic belt.

Helps Dodge Corporation of Canada Ltd. drilled conductors with coincident magnetic anomalies at Rochon Lake west of Ennadai Lake but intersections are not as good as the 90 feet of approximately two per cent Cu reported in 1974.

Cleaver Lake Mines Ltd. drilled 1,450 feet in nine holes on the PATCH group, a high-grade chalcocite showing near Hornby Bay on Great Bear Lake.

Nahanni District – Shell Canada Ltd. prospected, mapped, and diamond drilled its permit area near the Keele River.

Geological Survey of Canada Open File Report No. 298 started a small staking rush by Serem, Shell, Noranda, Harmon Management, Conwest, Cordilleran Engineering, Welcome North, etc. Generally small blocks of claims were acquired.

Cordilleran Engineering for Rio Tinto staked over 500 claims just north of the area of open file report 298. The claim group reportedly contains several copper showings in the Redstone Formation. Shell in October and November staked over 4,000 claims between Coates Lake and north of the Keele River valley to cover Proterozoic sediments with potential for stratbound copper deposits.

Copper-Nickel-Cobalt

Mackenzie District – Cominco Ltd. drilled geophysical target of the LYN-PRN groups near the mouth of the Perry River. It significant nickel or copper mineralization was not intersected.

Monpre Iron Mines Ltd. drilled a cobalt-nickel showing on the COGO claims at Lac Duhamel in the East Arm of Great Slave Lake.

Great Plains Development Company Canada Ltd. drilled five holes on a copper-cobalt showing in a volcanic vent of the Seton volcanics near Taltheilei Barrows in the East Arm of Great Slave Lake.

Titanium

Keewatin District – Pan Ocean Oils Ltd. and Noranda Exploration Company Ltd. staked part of a small Dubawnt Group claim west of Yathkyed Lake.

Shell Canada Ltd. continued to study radiometric anomalies detected in the 1974 survey west of Tebesuak Lake. Reconnaissance geology and geophysics surveyed an extensive area.

Cominco Ltd. optioned Pan Ocean Ltd.'s holdings along the south and east shores of Baker Lake and undertook extensive geological mapping, geophysical surveying and diamond drilling. A titanium showing northeast of Kazan Falls was drilled and numerous radioactive anomalies detected by 1974 airborne survey were surveyed.

Rio Alto Explorations Ltd. acquired a prospecting permit southeast of Princess Mary Lake and had a radiometric survey flown.

Urangesellschaft Canada Ltd. acquired prospecting permits and the area contained under Metallgesellschaft Canada Ltd.'s 1974 permits west and northwest of Baker Lake. Geochemical, airborne and ground geophysical surveys tested extensive areas west of Baker Lake. A block of 624 claims were staked for Urangesellschaft near Yathkyed Lake.

Uranerz Exploration and Mining Ltd. surveyed areas west and north of Baker Lake with reconnaissance geophysics and geology.

Arctic Islands – Imperial Oil Ltd. conducted airborne and follow-up ground radiometric surveys on southern Baffin Island between Frobisher and Cape Dorset.

Mackenzie District – Cominco Ltd. surveyed a large area southeasterly from Bathurst Inlet with helicopter-borne scintillometer and staked three claim groups on anomalies.

Mattagami Lakes Mines Ltd. did a lake sediment and airborne spectrometer survey from Scott Lake to Ingall's Lake along a belt of paragneiss; the company staked at the west of Ingall's Lake; and did geological, geophysical and geochemical surveys.

Rio Tinto Canadian Exploration Ltd. did scintillometer and track-etch surveys on the holdings of Vestor Exploration in the East Arm of Great Slave Lake, at Charlton Bay, Meridian Lake and Toopon Lake. Five holes totalling 2,466 feet were drilled on the Charlton Bay property.

W. Shupe ran a radiometric survey over the WS claims near Tsu Lake, approximately 50 miles north of Fort Smith.

Noranda Exploration Ltd. did radiometric and geological surveys on the SUE-DIANNE group near Mazenod Lake. Drilling of high-grade pitchblende veinlets in fracture zones was suspended because heavier equipment was required.

Uranerz Exploration and Mining Ltd. did reconnaissance airborne radiometric and lake sediment surveys in the western part of the Bear Structural Province and checked anomalies at De Vries and Betty Rae Lakes by geochemical, radiometric, magnetometer and geological surveys.

New Pyramid Gold Mines Ltd. drilled over 2,100 feet in nine holes to test pods of uranium mineralization in a breccia zone between felspar porphyry and quartzite at Beaverlodge Lake near Hottah Lake. Geophysical and geochemical surveys covered part of the claims.

Cominco Ltd. drilled 2,500 feet in five holes on a uranium prospect on the CANINE-COMUR group at St. Germaine Lake, mapped the COMUR group and two other showings. Drill assays were not as encouraging as surface indications.

B.P. Minerals Ltd. did geological and geochemical surveys on Permis 310, 311 and 312 south of Dismal Lakes and on its claim groups adjoining Imperial Oil's Permit 316 to the north. In this area, Paleohelikian sediments overlie Aphebian granite which is in faulted contact with porphyritic felsite, probably also of Alpehbian age.

Eldorado Nuclear Ltd. drilled 2,500 – 3,000 feet in eight holes to obtain geological information on the PEC group south of Dismal Lakes. A track-etch survey was also done.

Imperial Oil Ltd. drilled 1,500 feet in eight holes on the YUK group adjoining the PEC group.

Gold and Silver

Keewatin District – O'Brien Gold Mines Ltd. flew in heavy equipment and constructed a permanent camp at its Cullatton Lake gold deposit where an adit was collared and 204 feet were driven before the operation closed for the winter.

Mackenzie District – United Reef Petroleum Ltd. completed EM and magnetometer surveys on its PENNY claims, a gold property previously drilled by Cominco on the Back River.

Giant Yellowknife Mines Ltd. drove a 959 foot decline near the Salmita shaft at Mathews Lake and began a feasibility study for a small-scale mining operation. Giant drilled Arcadia Explorations Ltd. property near Grey's Bay on the Arctic Coast.

Mission Mining and Development Ltd. drilled a silver prospect south of Hornby Channel on Great Slave Lake.

Terra Mining and Exploration Ltd. explore underground on the TA group at Bullmoose Lake 50 miles east of Yellowknife, and in joint venture with Sunshine Mining Ltd. explored the LEAH claims and the Conjuror Bay area. Underground drilling continued at Terra Mine with the development of the No. 13 vein.

Duke Mining Company Ltd. drilled 830 feet on the Lambert vein on the TT gold property about 50 miles northeast of Yellowknife.

Precambrian Shield Resources Ltd. performed EM and magnetometer surveys on the AP claims at Myrt Lake about 45 miles northeast of Yellowknife.

Mineral Production Chart – 1966 to 75

Northwest Territories

| Mineral | 1966 | 1967 | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974 | 1975(a) | Cumulative Totals (b) |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------------------|
| Gold | 15,990,133 | 14,356,476 | 13,285,459 | 12,381,240 | 12,168,776 | 10,897,934 | 17,713,250 | 24,262,894 | 28,651,414 | 30,752,000 | 372,847,721 |
| ounces | 424,029 | 380,304 | 352,306 | 328,502 | 332,844 | 308,339 | 307,479 | 249,075 | 184,467 | 186,000 | ..... |
| Silver | 2,325,407 | 3,429,755 | 8,677,365 | 3,910,888 | 5,114,587 | 4,574,616 | 6,778,965 | 13,691,789 | 17,689,851 | 9,821,000 | 69,606,449 |
| ounces | 1,662,192 | 1,980,228 | 3,751,563 | 2,026,367 | 2,764,642 | 2,932,446 | 4,059,261 | 5,420,344 | 3,817,207 | 2,174,000 | ..... |
| Copper | 672,065 | 538,077 | 833,169 | 643,761 | 766,578 | 727,595 | 577,416 | 1,106,319 | 840,719 | 351,000 | 8,485,990 |
| pounds | 1,496,605 | 1,131,126 | 1,732,160 | 1,251,723 | 1,320,502 | 1,376,021 | 1,133,767 | 1,734,178 | 1,084,505 | 551,000 | ..... |
| Nickel ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 12,850,205 |
| pounds | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Lead | 31,472,562 | 35,665,535 | 33,636,984 | 32,299,014 | 37,842,405 | 22,629,795 | 27,838,277 | 32,261,787 | 34,932,761 | 30,841,000 | 315,080,084 |
| pounds | 210,659,720 | 254,753,820 | 250,275,180 | 212,913,740 | 239,206,099 | 167,628,110 | 180,439,960 | 199,887,160 | 168,708,403 | 151,555,000 | ..... |
| Zinc | 57,128,344 | 60,852,900 | 57,504,129 | 68,275,481 | 76,004,563 | 75,056,384 | 64,792,006 | 87,541,226 | 132,251,480 | 110,022,000 | 709,114,003 |
| pounds | 378,333,400 | 419,964,800 | 407,830,700 | 448,296,000 | 477,115,900 | 448,633,500 | 339,741,000 | 362,549,600 | 376,944,069 | 293,392,000 | ..... |
| Uranium(d) ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 79,477,897 |
| pounds | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Cadmium | 2,769,372 | 2,551,920 | 774,060 | 675,136 | 737,632 | 301,476 | 205,436 | 61,152 | ..... | ..... | 8,750,819 |
| pounds | 1,073,400 | 911,400 | 271,600 | 191,800 | 207,200 | ..... | 81,200 | 16,800 | ..... | ..... | ..... |
| Bismuth ..... | ..... | ..... | ..... | ..... | 3,072 | 41,149 | ..... | ..... | ..... | ..... | 44,221 |
| pounds | ..... | ..... | ..... | ..... | 490 | 7,578 | ..... | ..... | ..... | ..... | ..... |
| Tungsten ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| pounds | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| TOTAL | 110,357,883 | 117,394,663 | 114,711,166 | 118,185,520 | 132,637,613 | 114,228,949 | 117,905,350 | 158,925,167 | 214,346,225 | 181,787,000 | 1,576,257,389 |

Yukon Territory

| | | | | | | | | | | | |
|----------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|
| Gold | 1,639,103 | 675,725 | 911,338 | 1,118,715 | 653,034 | 511,534 | 234,983 | 2,032,502 | 4,111,631 | 4,245,000 | 275,662,486 |
| ounces | 43,466 | 17,900 | 24,167 | 29,682 | 17,862 | 14,473 | 4,079 | 20,865 | 26,472 | 26,000 | ..... |
| Silver | 5,868,217 | 6,701,756 | 4,806,384 | 5,182,166 | 7,845,312 | 8,966,417 | 8,331,575 | 15,342,856 | 26,800,905 | 29,434,000 | 205,523,995 |
| ounces | 4,194,580 | 3,869,374 | 2,077,987 | 2,685,060 | 4,240,709 | 5,747,703 | 4,988,967 | 6,073,973 | 5,789,783 | 6,516,000 | ..... |
| Lead | 2,386,684 | 2,141,959 | 970,629 | 4,256,183 | 20,830,196 | 29,340,379 | 34,392,366 | 38,013,324 | 41,194,600 | 56,260,000 | 224,323,867 |
| pounds | 15,975,125 | 15,299,709 | 7,221,940 | 28,056,581 | 131,670,010 | 217,336,142 | 222,921,742 | 235,522,452 | 198,950,056 | 276,466,000 | ..... |
| Copper ..... | ..... | 3,409,779 | 5,097,157 | 7,645,623 | 9,148,995 | 2,709,696 | 890,286 | 14,791,665 | 15,571,426 | 11,580,000 | 62,366,410 |
| pounds | ..... | 7,167,919 | 10,597,000 | 14,866,077 | 15,760,000 | 5,132,000 | 1,748,093 | 23,186,245 | 20,086,720 | 18,180,000 | ..... |
| Coal | 46,390 | 15,791 | ..... | 6,039 | 10,908 | 21,026 | 18,435 | ..... | 17,027 | 17,104 | 2,567,132 |
| tons | 5,670 | 1,912 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Zinc | 1,729,027 | 1,373,151 | 748,206 | 5,035,385 | 24,845,216 | 39,003,342 | 45,241,287 | 61,167,027 | 60,899,995 | 95,159,000 | 270,677,876 |
| pounds | 11,450,510 | 9,476,545 | 5,306,429 | 33,062,280 | 155,964,948 | 233,134,144 | 237,225,560 | 253,321,575 | 174,498,553 | 253,757,000 | ..... |
| Cadmium | 306,336 | 265,997 | 147,716 | 239,965 | 261,528 | 114,654 | 82,759 | 45,718 | 17,331 | 11,000 | 6,361,566 |
| pounds | 118,735 | 94,999 | 68,172 | 51,830 | 73,463 | 59,100 | 32,711 | 12,560 | 4,358 | 4,000 | ..... |
| Asbestos ..... | ..... | 406,371 | 8,684,125 | 11,924,526 | 13,927,652 | 12,374,380 | 13,006,476 | 13,915,140 | 22,752,400 | 31,970,000 | 96,991,070 |
| tons | ..... | 2,260 | 63,592 | 87,437 | 105,638 | 91,969 | 101,888 | 100,734 | 90,896 | 112,000 | ..... |
| Nickel ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 9,206,383 |
| pounds | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Platinum ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 475,031 |
| ounces | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| TOTAL | 11,975,757 | 14,990,529 | 21,365,555 | 35,402,563 | 77,511,933 | 93,020,402 | 106,502,067 | 150,667,311 | 171,348,288 | 783,737,104 | 1,154,155,816 |

(a) Preliminary Figures

(b) Cumulative Totals – 1932 to December 31, 1975
(Figures for tungsten not available)

(c) Cumulative Totals – 1886 to December 31, 1975

(d) Figures for years 1932, 1943 to 1953 not available

Arctex Engineering Services Ltd. surveyed part of the WAL claims at Banting Lake, about 10 miles north of Yellowknife with WLF, EM and magnetometer.

Cominco Ltd. is drilling the Kamcon lines Ltd. property adjacent to the Con line.

Northrim Mines Ltd. drove 400 feet of decline on their Silver Bay property in the Camsell River-Great Bear Lake area. Echo Bay Mines Ltd. explore the three claim Labine Point property of Dominion Explorers, dewatered the Eldorado Shaft to the 850 foot level, and explored the vein south of the shaft.

Nahanni District – Nahanni Placers Ltd. explored for placer gold in the Flat River area.

Other Minerals

Arctic Islands – Diapros Canada Ltd. continued to collect and process bulk samples of kimberlite on Somerset Island and to explore for additional occurrences.

MacKenzie District – Fidelity Developments Inc. staked claims and acquired permits south of Darnley Bay over a large and intense gravity anomaly.

Nahanni District – Canada Tungsten Mining Corporation Ltd. drilled several geophysical anomalies outlined by survey in the Flat River valley south of tungsten and diamond drilled the KEN claims of Tyee Lake Resources.

Luscar Ltd. conducted an extensive mapping program of the coal licences of Enbridge Petroleum Ltd. to the south of Fort Brman.

Manalta Coal Ltd. explored its Fort Brman area coal licence and encountered coal seams in several holes of an extensive rotary drilling program.

Mine Rescue

Central Mine Rescue Stations are maintained at Whitehorse, Yukon and Yellowknife, Northwest Territories. Substations are established at each mine. The Department now owns 101 Drager GB-174 four-hour breathing apparatus. It is the policy of the Department to have a minimum of 12 Drager units at each mine so that the mine rescue team can begin a rescue operation before the arrival of trained personnel from the central station.

Mine rescue teams from both Territories compete in the Canadian Mine Rescue Championship each year. In 1975 the competition was sponsored by Alberta and held in Calgary in June. Six teams competed from British Columbia, Alberta, Yukon, Northwest Territories and Nova Scotia. The Cominco team from the Con-Rycon Mine, Yellowknife won the competition.

Mining Safety Statistics

Yukon and Northwest Territories

The USA Standard Method of Recording and Measuring Work Injury Experience is used in the mining industry in the North. In accidents resulting in death, permanent total disability or permanent partial disability in the Territories, the number of days recorded as lost-time conforms with the time charges set down in the American Standard.

Disabling injuries are defined by the USA Standard at being those which result in death, permanent total disability, permanent partial disability or temporary total disability.

Days recorded as lost-time do not include the day of the accident or the day of return to work.

Accident frequency is expressed as the number of accidents per one million man-hours worked.

Accident severity is expressed as the number of days lost due to accidents per million man-hours worked.

Accident Statistics – 1975

In 1975 there were 70 disabling injuries reported to the Yukon Territory. The accident frequency for disabling injuries decreased from 25.07 in 1974 to 24.97 in 1975. There was an increase in the accident severity rate from 741 in 1974 to 2,902 in 1975. As was the case in 1974, "Fall of persons" was the chief cause of accidents in 1975 followed by "Caught between two objects" and "miscellaneous causes". These three main causes accounted for 53 per cent of all reported accidents. One fatal accident occurred in the Yukon Territory in 1975. On July 15, 1975 a miner was fatally injured due to a fall of rock at the Whitehorse Copper Mine.

In the Northwest Territories, 76 disabling injuries were reported in 1975. The accident frequency rate decreased from 24.37 in 1974 to 22.85 in 1975 while the severity rate decreased from 6,685 in 1974 to 2,640 in 1975. "Fall of persons" was the main cause of accidents in the Northwest Territories accounting for 30 per cent of all accidents. This was followed by "Strain while lifting", "Caught between two objects" and "Falling object". These four main causes accounted for 68 per cent of all accidents reported. One fatal accident occurred on September 16, 1975, in the Northwest Territories at the Echo Bay Mine when a mine worker was trapped in an ore bin and died of suffocation by fine ore.

Territorial and Social Development Branch

Territorial Affairs Division

Responsibilities

To act for the Federal Government in the negotiation and administration of federal-territorial financial agreements with both Territories;

To review fiscal and legislative policies and development plans for both the Yukon and Northwest Territories and to advise the Deputy Minister on matters relating to the administration of the Territories;

To co-ordinate the work of the Department of Indian Affairs and Northern Development and the governments of the Yukon Territory and the Northwest Territories in all federal matters not related to natural resources;

To advise the commissioners of the Yukon and Northwest Territories on matters of government administration in the Territories;

To co-ordinate the transfer of provincial-type services under the jurisdiction of the Federal Government to the governments of the Yukon Territory and the Northwest Territories;

To co-ordinate arrangements between the territorial governments and other departments and agencies of the Federal Government on matters affecting areas of territorial government responsibility.

Review of 1975-76

The Territorial Affairs Division continued to observe and assess the effects of the major amendments made to the Yukon and Northwest Territories Acts in 1974. Those amendments increased the size of the Yukon Council from seven to 12 members and the first Council of 12 was elected in November 1974. The Northwest Territories Council became a wholly-elected body of 15 members and the first Council of 15 was elected in March 1975, a majority of whom were native: six Inuit, two Métis and one Indian. In May 1975, another of the amendments to the Northwest Territories Act took effect when the new Council chose its first Speaker to preside over its deliberations.

The amendments to the two territorial Acts were complemented by other constitutional changes providing for the selection of two elected members to an Executive Committee in the Northwest Territories and the selection of a third elected member to the Executive Committee in the Yukon. The latter change, in the Yukon, was carried out late in 1974, and in the Northwest Territories, the two elected members were chosen by Council in May 1975, and formally appointed to the Executive Committee shortly afterwards.

Following the presentation by the Inuit Tapirisat of Canada of their "Nunavut" proposal in February 1976, the Territorial Affairs Division provided assistance to the Minister of Indian Affairs and Northern Development in his analysis of the proposal and its implications.

Financial Assistance for the Governments of the Yukon Territory and the Northwest Territories was appropriated in 1975-76 in the following amounts:

Financial Agreements

| | |
|-------------------------------|--------------|
| (Yukon Territory) | |
| Operating Grant | \$ 7,008,000 |
| Grant-in-lieu of income taxes | 6,590,000 |
| Capital-loans | 11,606,000 |
| Loans to third parties | 3,050,000 |

| | |
|-------------------------------|---------------------------|
| (Northwest Territories) | |
| Operating grant | \$79,020,000 ¹ |
| Grant-in-lieu of income taxes | 10,732,000 |
| Capital loans | 30,128,000 |
| Loans to third parties | 4,020,000 |

Additional Financial Assistance outside the Agreements

| | |
|--|------------|
| (Yukon Territory) | |
| Contribution: hospital care of Indians and Eskimos | \$ 120,000 |
| Contribution: medicare for Indians | 124,000 |
| Contribution: low income rental-purchase housing | 193,000 |
| Second mortgage loans to residents (CMHC) | 150,000 |

| | |
|--|-------------|
| (Northwest Territories) | |
| Contribution, hospital care of Indians and Eskimos | \$2,347,000 |
| Contribution: medicare for Indians and Eskimos | 504,000 |
| Second mortgage loans to residents (CMHC) | 170,000 |

The Division co-ordinated the negotiations for Federal-Territorial Financial Agreements to begin April 1, 1975 for both Territories.

Plans for 1976-77

The financial agreements which begin April 1, 1976 for both Territories, provide for assistance in the following amounts:

| | |
|---|---------------|
| (Yukon Territory) | |
| Operating Grant | \$ 10,924,000 |
| Grant-in-lieu of income taxes | 9,241,000 |
| Capital grants ² | 11,606,000 |
| Loans for relending to third parties ³ | 5,250,000 |

| | |
|---|---------------|
| (Northwest Territories) | |
| Operating Grant | \$109,856,000 |
| Grant-in-lieu of income taxes | 14,479,000 |
| Capital grants ² | 41,000,000 |
| Loans for relending to third parties ³ | 5,720,000 |

1. The revised level includes a supplementary operating grant in the amount of \$4 million beginning in 1975-76.
2. Federally-amortized capital loans and amortization grants have been replaced by capital grants.
3. Loans for relending to third parties are included in the Financial Agreements.

Long-term Plans

To develop long-term federal-territorial policies and financial agreements with both the Yukon Territory and the Northwest Territories and to assist the governments of the Territories in the exercise of their responsibilities and in the development of more responsible government.

To support proposals on territorial financial and legislative policies before federal co-ordinating and control authorities.

Training and Employment Liaison Division

Responsibilities

The Training Section is responsible for providing a counselling service for northern students in southern Canada on request. A Training On-the-Job Program for native northerners is administered by the Section. The Section is also responsible for arranging relocation to employment in southern Canada.

The Employment Liaison Section provides contact with all potential employers in the North, including resource development industries, federal departments and agencies, territorial governments and trade unions to ensure that the native northern residents have every opportunity to share in, and benefit from, the development of the North. The work covers the development of special employment programs, the negotiating of specific agreements and their subsequent monitoring and the encouragement of employment opportunities for native northerners.

Review of 1975-76

The Employment Liaison Section maintained a monitor on native employment, especially related to highway and oil industry activities. The mean native involvement on Mackenzie Highway construction stood at 42 per cent for the year and at 30 per cent in the oil industry activities. Other employment agreements were made or monitored and studies undertaken, to measure failure to reach agreed level of native people employed.

Work continues at various levels of study/discussion to attempt answers to native employment and retention problems. As part of this search staff attended numerous committees and seminars. The Northern Careers Program was developed and is now operational. The program is designed to guide native people into full-time jobs in the Federal Police Service.

Education and Training programs were arranged for over 250 northern natives in southern Canada during the year. These people were enrolled in university, college, technical, and high school programs. Permanent Counselling Units were maintained in Ottawa and Winnipeg, and part-time counsellors were engaged in other locations as required.

The On-the-Job Training Program operated to the full capacity of the program's finances. Over 50 northern natives were working as trainees with the thrust on placing trainees with the Northern Program in the NWT and the Yukon. Over 80 per cent of the trainees completing their training have been placed in permanent positions.

Northern native trainees under the supervision of an instructor, carried out the construction of two new houses for the Department at Watson Lake, Yukon.

Plans for 1976-77

The negotiation of Training and Employment agreements will continue with industries establishing operations in the North, with special emphasis on mining and petroleum companies, to ensure maximum participation of native people in the development of the North. Work will continue to foster the increased concern of the mining industry in employing native people through Mining Industry Committees. Research and studies will continue into answering problems related to native employment.

The On-the-Job Training Program will be expanded. Native trainees, under the supervision of an instructor, will carry out construction for the Department in the Northwest Territories.

Long-term Plans

The goal of the Employment Liaison Section is to maximize the placement and retention of native northerners to full-time jobs North of 60°. This will include the need to create work exchange systems in some 50 communities scattered throughout the North.

Provide specialist advice on Eskimo education and Northern education and training programs. Initiate new training programs to ensure that northern natives are placed in middle and upper management positions.

Social Development Division

Responsibilities

The Social Development Division coordinates the administration of certain special programs for Inuit and other northern residents, either on behalf of the Government of the Northwest Territories or representing residual federal responsibilities.

The Division comprises the following sections: the Native Liaison Section, the Eskimo Art Section, the Culture and Linguistic Section, and the Special Services Section.

The Native Liaison Section is responsible for establishing and maintaining liaison with northern native associations in matters related to northern development and other issues of concern to northern natives. The section supplies funds and otherwise facilitates the process of consultation with northern natives – a major requirement of the Cabinet Policy Statement on Northern Development.

The Eskimo Art Section promotes Inuit art by preparing interpretive exhibits from the Department's collection of Inuit arts and crafts for circulation to museums, universities and other institutions in Canada and abroad. It also provides specialist advice and assistance to the public on matters relating to Inuit art. Assistance is provided to Canadian Arctic Producers Limited and *La Fédération des Co-opératives du Nouveau-Québec*, the central marketing agencies for northern arts and crafts in the development of new products, and to the Canadian Eskimo Arts Council in the implementation of its recommendations. An educational program encourages artists to protect their own copyright. Infringements by southern manufacturers are discouraged by legal means.

The Culture and Linguistic Section provides a translation service in major dialects of the Eskimo language, and publishes a quarterly Eskimo magazine entitled *Inuttituu*. It also administers a grants scheme for the preservation and furtherance of the Eskimo culture and language. This section also sponsors Eskimo language films, assists in the publication of Eskimo literature and organizes cross-cultural conferences.

The Special Services Section provides specialist advice on various matters relating to Inuit and northern natives generally. It is also responsible for the Eskimo Loan Fund and associated financial assistance schemes, and Canadian Reindeer Limited, and participates in the deliberations of the Federal-Provincial Committee on Financial Assistance to Indians and Eskimos of Labrador.

Review of 1975-76

The Division supported Inuit Tapirisat of Canada in the completion of its Land Use and Occupancy Study – a basis for land claims research. Funds were also provided to the Indian Brotherhood of the Northwest Territories and the Métis Association for similar research. A contribution was made to the Labrador Inuit Association to investigate the validity of proposals dealing with a possible land claim. Certain associations received loans, repayable from the proceeds of settlement.

In addition, the Division is continuing to administer the funds made available to northern native associations by the Federal Government to enable them to put forward their interests in interventions before the Mackenzie Valley Pipeline Inquiry. During the year, regular informal discussions with representatives of the northern native associations have opened many doors to increased communication and consultation on issues of land claims, northern development and other concerns.

A full complement of exhibitions circulated to major galleries and smaller institutions during 1975-76, including an exhibit in recognition of International Women's year and a large exhibit of prints and sculptures, *We Lived by Animals* which travelled to Germany. A major retrospective exhibition of drawings by Pitseolak of Cape Dorset was chosen by the Department of External Affairs and the Smithsonian Institute, Washington, DC, to be part of Canada's contribution to American Bicentennial celebrations. The Division assisted the Ontario Science Centre in the planning of their proposed Native Heritage Exhibition and provided them with Eskimo translation services. Canadian Arctic Producers Limited celebrated its 10th anniversary in 1975. Control of the Company passed from the government to the Inuit co-operatives of the Northwest Territories.

Throughout 1975, surveys were conducted by an Inuit Language Commission in each of the major dialectal areas to determine the wishes of the Eskimo (Inuit) people concerning the development and implementation of a universally acceptable orthography. In December 1975 the Commission presented their report. With the implementation of a new mailing list and the addition of the Western dialect, the national Inuit magazine *Inuttituu* now has a readership of approximately 4,000 families across the North. Responding to the greatly increased need for written material in the Eskimo language, the Division, in co-operation with a typewriter manufacturer, arranged for the design and production of an Eskimo syllabic ball element for use with the appropriate typewriters. To maximize the element's effectiveness, a touch-typing course is being developed to coincide with the delivery of the element expected by the summer of 1976. In co-operation with the National Film Board, the Division supported Eskimo language films and video-tape projects with a view to increasing Eskimo language content on northern television. The first year of a joint four-year program involving the National Museum of Man and DIAND, to survey archaeological sites and recommend a policy for future protection of sites was completed.

During the year the Eskimo Loan Fund was increased to \$4.4 million. As of March 31, 1976 a total of 63 loans having a value of \$2,074,567 were made to Eskimos. In addition, \$421,803 was paid out in economic development contributions. In co-operation with other divisions of the Department and Government of the Northwest Territories, a review of the Eskimo and other loan funds operating in the North was undertaken with a view to reducing the differences between them. As a result, the interest rate of the Eskimo Loan Fund was increased to equal that of the Indian Economic Development Fund and a bank loan guarantee feature will be introduced.

Plans for 1976-77

The Division will be improving its function of liaison and consultation with northern native associations from the Yukon to the Labrador. Loan agreements will be monitored for the land claims research activities of the various associations. Funds will be made available to facilitate the process of consultation between the government and native people in matters of northern development. Opportunities for a full hearing at the Mackenzie Valley Pipeline Inquiry will be ensured. Concerns, such as development corporations and management training plans, will also be encouraged.

A newsletter of interest to Inuit artists will be published quarterly with contributions solicited from the artists. A resource centre of material on Eskimo art will be established in order to facilitate research. The Art Gallery of Ontario will circulate a departmental exhibition on the theme of Inuit Games during Olympic Year. In conjunction with a meeting of the Canadian Eskimo Arts Council in Frobisher Bay in April 1976, a regional art conference carving exhibition will be held with the purpose of encouraging the maintenance of quality. Support will be provided to the Ontario Science Centre Native Heritage Exhibition (1976) particularly the

portion of the exhibition relating to Eskimo life and culture. The Division will continue to work with the National Museum of Man in the joint program to survey archaeological sites. As a result of this program, quantities of whale bone will be turned over to co-operatives for carving projects. The Inuit Language Commission will be making major recommendations related to the development and implementation of improved writing systems in the Eskimo language. Demands for loans from the Eskimo Loan Fund for new businesses, as well as for co-operatives, for inventory and refinancing purposes are predicted at a high level. To reduce reliance on the resources of the fund and to encourage the growth of the commercial banking system in the North, the government will guarantee bank loans to Eskimo controlled enterprises.

Long-term Plans

The Division will continue to provide specialist advice on various matters relating to Inuit and the North in general. An emphasis will be placed on liaison and consultation with northern native associations, especially as land claims move towards negotiation and settlement. Support of Inuit cultural expression will continue to be encouraged. The Division will strive to ensure the implementation of the policy of the Government of Canada, *Northern Canada in the '70's*, with particular emphasis on involving native northerners in all matters affecting them.

Northern Research Division

Responsibilities

The responsibilities of the Northern Research Division are:

- to plan, conduct and sponsor research into social questions of northern Canada;
- to encourage and support northern research by non-government agencies;
- to collect and disseminate scientific information;
- to analyse research findings and channel proposals to appropriate program managers;

- to assist the Territorial Governments with the co-ordination of research activities in the North;
- to operate the Inuvik and Igloolik Research Laboratories; and
- to make plans for additional laboratory facilities.

Review of 1975-76

Northern research continued in 1975-76 with an emphasis on work related to problems of social change for native people in the North and, in particular, on the possible effects of large-scale resource development. A large portion of this research was done by university scientists and others working under contract for the Division, whose officers supervised and co-ordinated these research projects. Research projects carried out or directed by the Division in 1975-76 include:

- training of Inuit para-professional researchers;
- Inuit and the criminal justice system: Frobisher;
- the co-operative movement among the Inuit of Nouveau-Québec;
- the teaching and research programs sponsored by Canadian universities in the North;
- problems of demography and human ecology in the North;
- a project to assist the Eskimo communities of Labrador to define and respond to problems of social change;
- the effects of television on northern children;
- a study of attitudes of native peoples to development;
- research on the presentation of the Inuit and Indians of Canada in school textbooks;
- a study related to Northern Employment;
- social and economic effects of the proposed Eastern Arctic gas pipeline on northern communities; and
- a study of renewable resources and their modern framework.

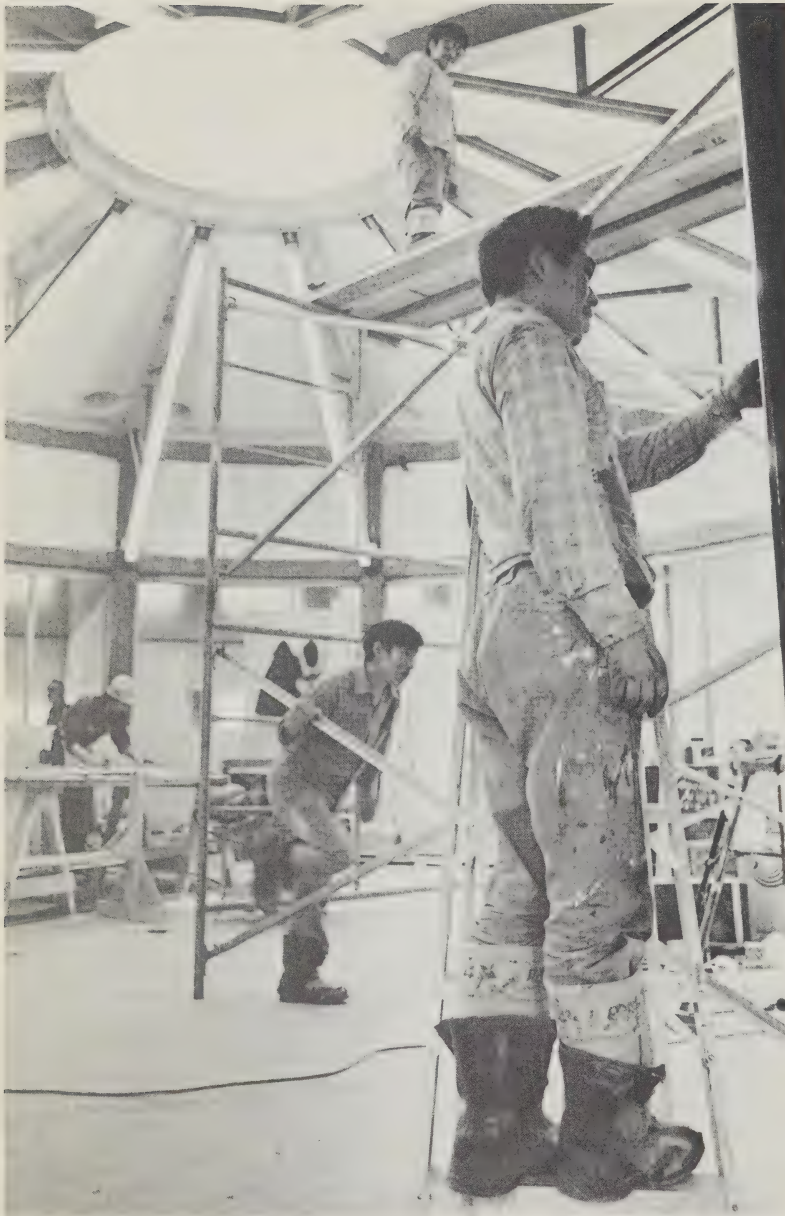
During the year, efforts were made to formalize and develop the Division's analysis capacity so that research findings could be more effectively translated into policy proposals and communicated to program managers. The first steps were taken to develop a Reference and Documentation Service which would collect, process, store and disseminate information on northern scientific research. This would provide a single source of information to the federal, territorial and provincial governments, universities, organizations and industry, and promote improved communications between groups and individuals engaged in northern research.

A Northern Social Research Committee was set up which will, among other tasks, advise the Division on priorities in Northern Social Research, and help bridge the gap between scientists and managers. The Committee's membership is drawn from the Territorial Governments, federal departments with northern social responsibilities, native organizations, and the academic community. The first meeting of the Committee was held in Whitehorse, YT on February 17, 1976.

The Division was asked to participate in the Arctic Islands Pipeline Research Program, co-ordinated by the Environmental-Social Program, Northern Pipelines, and plans were made for community studies of Spence Bay and Resolute, in conjunction with the Government of the NWT and the two communities. The community studies are being carried out by the Polar Gas Project.

Officers of the Division were seconded for varying periods of time during the year to the Northern Quebec Inuit Association, and the Indians of Quebec Association, to assist them in research and other matters.

In 1975-76, the 14th year of the Northern Scientific Training Grants Program for northern research institutes and scientific research expeditions, amounts totalling \$325,000 were awarded, as recommended to the Minister, by a



Inuit residents of Igloolik supplied much of the manpower in constructing the unique Eastern Arctic Research Lab at Igloolik

Grants Committee. Through these grants a large number of northern research projects were supported in a wide variety of scientific disciplines. Grants were made to:

Groupe de recherches nordiques (Université de Montréal);
Boreal Institute (University of Alberta);
Centre d'études nordiques (Université Laval);
 Committee on Arctic and Alpine Research (University of British Columbia);
 Committee on Northern Studies (University of Manitoba);
 Institute for Northern Studies (University of Saskatchewan);
 Institute of Social and Economic Research (Memorial University);
 McGill Committee for Northern Research (McGill University);
 Committee for Arctic & Sub-Arctic Research (University of Toronto);
 Northern Research Group (University of Ottawa);
 Northern Research Committee (University of Western Ontario);
Centre de recherches sur le Moyen-Nord (Université du Québec à Chicoutimi);
 The Presidential Committee on Northern Studies (McMaster University);
Ecole Polytechnique (Université de Montréal).

A total of \$100,000 was awarded in 1975-76 to Canadian universities to support specified research into northern problems identified by government. The projects supported by this program are included in the above list of research projects carried out or directed by the Division.

The Division continued to operate the Inuvik Scientific Research Laboratory in Inuvik, NWT. This laboratory, opened in 1963, provides general laboratory and other facilities to support research in a variety of scientific disciplines in the Mackenzie Delta Region. The Eastern Arctic Research Laboratory at Igloolik was opened in the summer of 1975 by the Minister for its first season of support to scientific research in the eastern sector. The Igloolik community was kept

well informed about the laboratory's operations through the circulation of a local information sheet, and through a local advisory committee. Preliminary planning was carried out during the year for a third laboratory in Whitehorse to serve the Yukon area, and consideration was given to the consolidation of scientific facilities in Yellowknife and in Resolute in connection with the planned relocation of the Resolute townsite.

Plans for 1976-77

The Division will continue to develop and carry out research programs directed mainly towards the social questions of northern Canada and, in particular, to place an emphasis on assessing the potential social impact of pipelines and resource developments in the North.

The Division's capacity of analysing research findings and evaluating programs will be strengthened and developed to ensure that the Division's research effort is given proper consideration in the formation of northern social policy.

The Reference and Documentation Service whose development was begun in 1975-76 will continue by recording - in an appropriate card system - current research being done in all the programs of the Department as well as in other federal government departments, agencies and crown corporations, plus research undertaken by the territorial and provincial governments, universities, professional and non-profit organizations, and industry. It will also establish a card system for sources of material useful to researchers, and one for experts in various fields of research.

The grants program will continue in 1976-77 to support a wide range of northern research.

Planning for further scientific facilities in the North including laboratories at Whitehorse, Yellowknife and Resolute will continue.

Long-term Plans

The Northern Research Division will continue to encourage the scientific investigation of the North in accordance with the Department's statutory responsibility to foster northern research. It will continue to provide advice and research services to the Department's management and programs, in support of the Government's northern policy for the seventies. It will provide a single service capable of furnishing information on current research in the Canadian North; referring enquiries to experts, material and sources of other information; providing unpublished documents; monitoring northern programs to update information, and disseminating this information possibly by newsletter. In addition, the Division will assist the Territorial Governments and the native organizations to develop their own research capacities.

Department of Justice (JUST)

Responsibilities

The Department's responsibilities include the appointment of judges to the Territorial Supreme Courts and the direction of Court proceedings on behalf of the Crown including prosecutions under the Criminal Code and other federal statutes. The Department has also a shared responsibility for the cost of legal aid, native courtworker and compensation to victims of violent crimes programs in the Northwest Territories, as well as for the native courtworker program in the Yukon Territory.

Review of 1975-76

Payments totalling \$85,020 were made to the Northwest Territories representing the federal share of the cost of legal aid for the year ending March 31, 1975 (\$67,520) and of the native courtworker program for 1975-76. Payments totalling \$7,500 were made to the Yukon Territory representing the federal share of the cost of the native courtworker program for 1975-76.

Agreements were signed with the Northwest and Yukon Territories for the cost-sharing of operational expenditures of the native courtworker program effective in 1975-76, as well as for sharing of the costs of the compensation to victims of violent crimes program with the Northwest Territories effective in 1976-77.

Discussions continued concerning the establishment of cost-shared legal aid and compensation to victims of violent crimes programs in the Yukon Territory.

The Department and the Government of the Northwest Territories are cost-sharing an experimental community legal services project in Frobisher. Payments totalling \$50,000 were made for this project for its 1975-76 operation.

Plans for 1976-77

It is hoped that discussions now taking place with the Yukon Territory will result in the establishment of the cost-shared programs referred to above.

It is anticipated that the amount of funds available for the native courtworker services in both Territories will increase substantially over the next few years, especially in the Northwest Territories.

The Department and the Government of the Northwest Territories have agreed to commence a comprehensive review of the present federal-territorial legal aid agreement and program, in addition to carrying out an evaluation of the Frobisher Legal Services Centre which will continue to receive Departmental contributions in 1976-77.

Department of Labour (LAB)

Responsibilities

The Department has one overall responsibility, which is to achieve economic and social progress with justice through the promotion of good industrial relations and improved working conditions. To further this basic responsibility, the Department's principal activities are assigned to:

- settle industrial disputes and encourage co-operation between labour and management;
- establish and maintain fair standards of wages, working conditions and safety in employment;
- achieve equality of job opportunity and safeguard human rights in matters affecting labour;
- provide research, statistical and information services in labour matters to unions, employers, government and the public;
- promote and participate in national and international tripartite consultation in matters affecting labour.

Federal Mediation and Conciliation Services

Review of 1975-76

The Branch participates in labour relations in the Northwest Territories and the Yukon in connection with proceedings under Part V (Industrial Relations) of the Canada Labour Code.

Activities

Number of cases in square brackets]
Disputes referred to Conciliation Officers pursuant to Section 164 of the Code [13];
disputes referred to Conciliation Commissioners pursuant to Section 166(a) of the Code [3];
disputes referred to Conciliation Boards pursuant to Section 166(b) of the Code [nil];
provision of Mediation Services pursuant to Section 195 of the Code [nil];
disputes arising over the interpretation, application or alleged violation of provisions of collective agreements whereby the Minister was asked to appoint an arbitrator or arbitration board chairman [3].

Research and Program Development

Conditions of Work Branch

Review of 1975-76

Federal Contracts

Inspections on Government Contracts – During the fiscal year nine inspections were carried out by Branch officers. Of these eight were made in the Northwest Territories and one in the Yukon Territory. These inspections directly affected nine main contractors. Wage adjustments were collected from three main contractors involving \$1,614.29 and 117 employees.

Wage Schedules Issued

| | NWT | Yukon |
|------------------------|-----|-------|
| Construction contracts | 91 | 34 |
| Service contracts | 10 | 6 |

Part III of the Canada Labour Code (Labour Standards)

It should be noted that the provisions of Part III of the Canada Labour Code (Labour Standards) do not apply to a work, undertaking or business of a local or private nature in the Yukon Territory or the Northwest Territories. The Territorial Councils have issued ordinances respecting employment standards in activities that fall within their jurisdiction.

Part III of the Code does, however, apply to those kinds of businesses that normally come within federal jurisdiction when located in the provinces.

During the 1975-76 fiscal year nine complaints were investigated under Part III of the Canada Labour Code (Labour Standards), of which two were in the Yukon Territory and seven in the Northwest Territories. As a result of these investigations, violations were corrected and the sum of \$1,659.74 was recovered for five employees.

In the same period there was one routine inspection carried out under the same authority. The company was found to be in violation of the Code under Division I (Hours of Work) and II (Minimum Wages), for which \$1,375.03 was recovered for one employee.

Under the previous organizational set-up, it was the custom of the Branch to carry out routine inspections of undertakings subject to federal jurisdiction and of contracts with the Federal Government in the Northwest Territories or the Yukon Territory. The numbers were determined by our complaint load and available resources. The normal program of inspections and investigations of complaints will be carried out during the fiscal year 1976-77 by the regional areas.

Rights in Employment Branch

Responsibilities

As of October 14, 1975, under the reorganization of the Canada Department of Labour, the Fair Employment Practices Branch and Women's Bureau became divisions under Rights in Employment Branch. Part I of the Canada Labour Code (Fair Employment Practices) will be administered by the five regional offices of the Department across Canada.

The Rights in Employment Branch will be maintaining programs in relation to future human rights developments and will establish new programs and policies designed to ensure that all individuals have fair and equal opportunities to obtain employment, receive promotions and get first and equal treatment on the job.

Review of 1975-76

During 1975-76 a few complaints relating to territorial Fair Employment Practices ordinances or other labour matters under territorial jurisdiction were received and the complaints referred to the appropriate territorial administration.

The Women's Bureau, on a continuing basis has provided a consultative and information service on matters directly related to the objectives of the Bureau.

Plans for 1976-77

The Branch through its officers will continue to provide assistance and will continue its involvement as a permanent member of the Committee on the Employment of Native Northerners of the Advisory Committee on Northern Development.

Employment Relations Branch

Responsibilities

The Employment Relations Branch provides, within federal, provincial and territorial areas of the industrial relations universe, assistance necessary to develop and maintain attitudes, methods and procedures that will effect improvement in the labour-management relationship.

Review of 1975-76

The activities of this Branch in the North during 1975-76 were limited to contacts with representatives of parties concerned with the performance of consultation committees established in the fiscal year 1974-75 at White Pass and Yukon Route in Whitehorse, Yukon Territory. These companies fall within federal jurisdiction.

Plans for 1976-77

There are no definite plans to increase activities in the North beyond normal support and servicing procedures and mechanisms currently in existence.

Occupational Safety and Health Directorate

In addition to its long-standing activities in the Yukon and Northwest Territories with respect to the administration of the Government Employees Compensation Act, the Occupational Safety and Health Directorate has during 1975-76 made some progress in the implementation of a comprehensive employment safety program on premises of employers subject to Part IV of the Canada Labour Code as well as in Public Service of Canada under authority of the Occupational Safety Policy.

Accident Prevention Division

Responsibilities

Through the provisions contained in the Canada Labour Code Part IV (Safety of Employees), the Accident Prevention Division is responsible for assuring the existence of safe and healthful working conditions in federal works, undertakings and businesses. In the Federal Public Service, the Division monitors existing accident prevention programs and assists

in their development and improvement in accordance with the Occupational Health and Safety policies issued by Treasury Board.

Review of 1975-76

The lack of travel funds and the serious shortage of staff in departments, crown corporations and private companies has affected accident prevention activities in the North particularly in the Northwest Territories.

The comprehensive safety program for the Northwest Lands and Forest Services of the Department of Indian Affairs and Northern Development was started in 1973 and in 1974 resulted in an 85 per cent reduction in lost time injuries and a 50 per cent reduction in medical aid injuries, but the progress has not been sustained. This service has gone through a year of very high staff turn-over, including senior positions.

Statistically, there was an 88 per cent increase in the total number of fires and a 66 per cent increase in the number of fires fought. There were two aircraft accidents with no injuries. While the fire fighting operation has become very sophisticated the need for safety training is essential if the accident rate is to be reduced. Assurance has been given that the position of Safety Training Officer, vacant for 10 months, will be filled by the end of this fire season.

The Northern Canada Power Commission has maintained a low accident rate.

The extensive safety and first-aid training program was arranged last year for management and supervisors for the National Transportation Company Limited.

Generally all departments, crown corporations and private companies are finding it more difficult each year to maintain their staff. The high rate of turn-over makes it difficult to maintain continuity and effectiveness in accident prevention programs. This in turn requires an exceptional allocation of Department of Labour resources to keep these programs going.

Routine safety visits to assess employment and health standards were conducted at public service and federal enterprise locations at Hay River, Yellowknife, Tuktoyaktuk, Fort Smith and Struth Lake. In the Yukon, visits were made to the main centres of population; Whitehorse, Watson Lake, Mayo, Dawson City and Haines Junction, with visits to a number of intermediate locations.

A sound survey was conducted on the dredging operations of the Department of Public Works at Hay River. This survey revealed noise problems which are presently under discussion with the Western Regional Office of the Department of Public Works to assure the introduction of a full noise control program.

Meetings were held with management and operating personnel of the Yukon Forest Service, National Parks Branch, Transport Canada (Air Services), Department of Public Works, Department of National Health and Welfare, Customs and Excise and the Post Office.

Meetings with management and inspection of operating sites were conducted for Canadian National Telecommunications, Frontier Helicopters, Loiselle Transport, CP Air, Northern Canada Power Commission (including the new hydro power generating site in Aishihik), White Pass and Yukon Route Highway Division and Railway Maintenance.

The federal/provincial agreements for boiler and electrical inspections in the Northwest Territories have gone smoothly in this fiscal year. The agreement for the weigh scale inspectors to enforce the Canada Motor Vehicle Operators Hours of Service Regulations had some difficulty in the first six months due to staff shortage and labour disputes. However, during the past three months services as required by this agreement have been provided.

Discussions were held with officials of the Yukon Territorial Government respecting the provision of inspection services for boilers, pressure vessels, electrical installations, elevating devices and general safety. No decision was made respecting the completion of a formal Inspection Service Agreement at this time due to lack of resources by the Territorial Government to perform this service on a continuing basis. However over the past year a total of 31 inspections

were conducted on behalf of Labour Canada by inspectors under contract to the Territorial Government.

Plans for 1976-77

A two- or three-week visit by a safety consultant is planned for early summer to carry out routine inspections in the Yukon Territory to meet with management to review their accident prevention programs and to discuss inspection services with the Territorial Government.

Discussions will be held with the Northern Transportation Company (limited in the Northwest Territories to review the company's accident prevention programs. With the change in staff of Northwest Lands and Forest Services (regional branch of DIAND) and Northern Canada Power Commission, time will be spent with them to ensure the continuation of their programs.

Accident investigation seminars are planned for Inuvik, Yellowknife, Hay River and Frobisher. These seminars will be open to management and supervision in both the federal and provincial sectors. Evaluations will be made on the following organizations:

- Northern Transportation Company Limited (fork lift and other heavy equipment);
- Northwest Lands and Forest Services (fire pumps and chain saws);
- Wood Buffalo National Park (fire pumps and chain saws).

Long-term Plans

To work with the federal departments, Crown corporations and agencies and private employers subject to federal jurisdiction so that accidents are minimized and the level of employment safety in the North is at a standard equal to that of the rest of Canada. This will be achieved through safety audits, program development, technical surveys, consultative surveys and when necessary by the involvement of the Treasury Board Standards and the Safety and Health Regulations made pursuant to Part IV of the Canada Labour Code (Safety of Employees).

To provide information and consultation for personnel of federal enterprises with respect to the Canada Labour Code Part IV and the Canada Safety Regulations.

To make further efforts to negotiate a formal agreement with the Government of the Yukon for an Inspection Service Agreement.

To continue having the Government of the Northwest Territories conduct all mechanical inspections and when they have experienced staff, to have the Agreements expanded to cover elevator and gas burning equipment in their inspections when the need for these services arise.

Accident Compensation Division

Claims of federal government employees usually employed in the Yukon and Northwest Territories, for compensation for occupational injuries or diseases were received in the Branch, certified and forwarded to the Workers' Compensation Board of Alberta for adjudication and payment under a federal-provincial arrangement. During the calendar year 1975, 444 claims were received and approximately \$200,000 in disbursements were made.

Library and Information Services

The Legislative Research unit of Library and Information Services provides an information and advisory service concerning industrial relations, labour standards, occupational safety and health, workmen's compensation, apprenticeship and human rights legislation.

Territorial ordinances are analysed and published in summary form along with new enactments of the other Canadian jurisdictions, in such regular publications as the *Legislative Review*, *Labour Standards in Canada*, *Workmen's Compensation in Canada*, *Human Rights in Canada*, and the *Labour Gazette*.

Labour Data Branch

The Labour Data Branch carries out an annual survey of wages, salaries and certain conditions of work which covers establishments in Canada having 20 or more employees. The 1975 survey included 31 establishments in the Yukon Territory and 52 establishments in the Northwest Territories. The survey will be carried out again in 1976.

Information on strikes and lockouts, labour organization and union membership in the Territories is also collected and published.

The Branch maintains a file of collective agreements which includes agreements covering employees in the Yukon and Northwest Territories.

Department of Manpower and Immigration (M&I)

Responsibilities

The fundamental purpose of the Department is to further the economic and social development of Canada by helping to meet the employment needs of both employers and workers in every part of Canada. The Department endeavours to achieve this purpose through the application of wide-ranging programs and services, which include a network of strategically located Canada Manpower Centres, professional counselling, recruitment services, training programs, relocation assistance, control of non-immigrant workers, industrial adjustment assistance and programs for people with special needs.

The operational responsibilities for the delivery of the Department's services in the Canadian North are assigned as follows:

Yukon Territory

The Director General, Pacific Region, Department of Manpower and Immigration, Royal Centre, P.O. Box 11145, 1055 West Georgia Street, Vancouver, British Columbia V6E 2P8.

Northwest Territories

The Director of Manpower, Northwest Territories, Department of Manpower and Immigration, P.O. Box 1950, Northway Building, Yellowknife, N.W.T. X0E 1H0.

The Director reports to the Director General, Prairie Region, Department of Manpower and Immigration, Room 190, Grain Exchange Building, 167 Lombard Avenue, Winnipeg, Manitoba R3B 0T6.

Federal-Territorial Relations – The Federal-Territorial Manpower Needs Committees are intergovernmental committees with the mandate to discuss all aspects of manpower policies and programs.

Yukon Territory

The Yukon Manpower Needs Committee and its sub-committee, the Yukon Manpower Training Needs and Research Committee, continued to function in their co-operative roles of federal-territorial planning and consultation on manpower matters. The hiring of a Research and

Planning Officer by the Yukon Territorial Government, under the terms of the Adult Occupational Training Agreement, has improved the capabilities of these committees. Under direction from the Yukon Manpower Needs Committee, the Research and Planning Officer has responsibility for all functions associated with research, planning and analysis, and for the provision of secretariat services to both committees.

Northwest Territories

The responsibility of the Federal/Territorial Co-ordinator is to establish and maintain liaison with other federal and territorial departments interested in Manpower Department programs and activities. This person also has the accountability of analysing developments and needs in the field of manpower in the territories which have implications for joint intergovernmental action.

During the fiscal year of 1975–1976, the Director of Manpower, Northwest Territories, was appointed as co-chairman of this committee. With the federal co-chairman of this committee now located in Yellowknife, it will enhance the co-operative approach to federal-territorial planning and consultation.

Review of 1975–76

Yukon Territory

The major focus of the Department continued to be the improvement and extension of services to outlying areas of the Yukon. Every Yukon community was visited at least once by a staff member. In addition, Outreach Workers, strategically placed throughout the Yukon, were able to extend CMC services, on a continuing basis, to the local labour forces. This combined effort concentrated on the overall delivery of services to employer and employee clients, including special needs clients and the general provision of assistance and information related to manpower services.

An active Canada Manpower Service Employers Program continued throughout the year with the objectives of encouraging employers to upgrade their labour force, primarily through training, and to develop effective methods for the recruitment of workers to ensure maximum utilization of the Yukon labour force. This was accomplished through personal visits to employers, memberships in organizations such as the Chamber of Commerce, continued close liaison with organizations such as the Yukon Chamber of Mines and continued active involvement in northern communities.

Activities associated with the Manpower Assessment Incentive Agreement between the White Pass and Yukon Corporation Ltd., two locals of the Teamster Union, the Yukon Territorial Government and the Department continued throughout the year. This agreement, negotiated by the CMC and specialists from the Manpower Consultative Services (MCS), provided for a comprehensive study of the various manpower factors affecting the operation of this integrated transportation company and their 350 northern employees. Major results included the establishment of a climate whereby change could take place, the establishment of a company training centre, the finalization of the major training programs undertaken in 1974–75, the development of an ongoing training program to meet more precise needs and a general improvement in the attitudes of management and workers alike towards their respective responsibilities to the Corporation, the work force and the Yukon economy in general.

The 1975–76 Summer Student Employment and Activities Program (SSEAP) ran from January to September 1975. A graduate student was hired in January to oversee this separate operation, to contact all post-secondary Yukon students and to co-ordinate the Yukon Territorial Government's student hiring program. As a result, virtually all Yukon post-secondary students had pre-arranged employment with the Yukon Territorial Government, Federal Departments and other employers upon their return to the Yukon.

Three additional under-graduate students were hired later in the program to provide assistance to secondary school students and students from other parts of Canada in their quest for summer employment. Other student activities included visitations to virtually all Yukon employers who might conceivably employ students, visitations to guidance classes in secondary schools to outline the anticipated summer employment situation and a general public relations program directed to employers to encourage the hiring of students during the summer break. The year-round program continues to include counselling and placement services, presentation of Creative Job Search Techniques (CJST) courses, assistance to guidance counsellors of the secondary schools, and participation in Career Days and related career-oriented school activities.

The 1976-77 Summer Student Employment and Activities Program (SSEAP) commenced in January 1976 with the hiring of a graduate student to implement the Program. The objectives and methods of operation remain the same as in previous years.

The Job Information Centre (JIC) concept, with certain modifications, continued to be utilized throughout the year. In the year, the CMC premises were expanded to provide additional floor space for the adequate display of job vacancy, labour market, career and other related information.

A permanent Canada Immigration Centre (CIC) was established in the Yukon on April 1, 1975. The establishment of the CIC at Whitehorse has proven to be a valuable and well-received addition to departmental services in the Yukon and has greatly reduced the difficulties experienced on immigration matters. The activities of the CIC have encompassed the complete range of the Immigration Commission's responsibilities.

Over 10,630 worker clients registered with CMC in the Yukon Territory in 1975-76. Of these, over 7,912 persons were referred to known job vacancies and over 3,400 workers were placed in employment. Over 26,719 counselling interviews were held and over 1,127 counsellor visits were made to employers' premises.

Northwest Territories

The Northwest Territories was serviced by fully autonomous Canada Manpower Centres in the communities of Yellowknife, Hay River, Inuvik, and Frobisher. A full-time sub-office was maintained at Fort Simpson, and a second sub-office opened on a full-time basis at Fort Smith. Itinerant services were provided to all of the larger settlements in the NWT.

The Canada Manpower Centre of Yellowknife and its branch offices serve about 30 settlements with a total population of over 20,000. This CMC is responsible for approximately two-thirds of the area of the NWT; 1,304,903 square miles or one-fifth the area of Canada with an authorized staff of 18. Services of the CMC were largely directed toward the government offices in the capital of the NWT and the major mines in the NWT, including two large gold mines in Yellowknife.

The Canada Manpower Centre of Inuvik is responsible for an area of approximately one-sixth of the Territories and services about 12 settlements, with a combined population of over 6,000. The CMC is primarily concerned with activity generated by petroleum exploration and activities concerned with the Dempster Highway.

The Canada Manpower Centre of Frobisher is responsible for about one-sixth of the area of the NWT. Approximately 24 settlements, with a combined population of over 8,000 received service as resources permitted. The staff of four are concerned with employment in the Baffin Region, which is largely a hunting and trapping economy; and with the development of a new lead/zinc mine at Strathcona Sound.

The Canada Manpower Centre of Hay River is accountable for all of the market activity in an area of about 30,000 square miles. During the past year, the CMC has focused its attention on the needs of employers in four of its major communities with emphasis on the transportation and mining industries. It is estimated that the CMC of Hay River services a population of approximately 6,500.

The Department is establishing a permanent economic analysis capability for the NWT. The Economic Analysis and Forecast Branch first established a District Economist in Yellowknife in May 1973. The office now consists of a Chief Economist and Statistical Research Clerk and will be expanded as needs are identified.

The major service provided by the Chief Economist's office is the publication of an annual, *Outlook*, in which economic development and human resource trends for subsequent years are identified and in which strategies for human resource development and utilization are proposed. Other services include the collection, analysis and dissemination of labour market data and other statistical data which are relevant to human resource policy.

Over 10,500 worker clients registered with CMC in the NWT in 1975-76. Of these, over 7,500 persons were referred to known job vacancies and over 3,000 workers were placed in employment. Over 14,000 counselling interviews were held and over 8,000 counsellor visits were made to employers' premises.

Canada Manpower Training Program (CMTPT)

Yukon Territory

The CMC continues to be involved and supports virtually all vocational courses offered by the Yukon Territorial Government through the Yukon Vocational and Technical Training Centre. Special emphasis continues to be placed on Basic Training for Skill Development (BTS) courses in outlying communities. These courses are directed primarily towards the Indian population with the twofold objective of increasing their social and academic skills and providing them with the necessary prerequisites for entering into the labour force or into other vocational training courses. Under the terms of the *Adult Occupational Training Act (AOTA) Agreement*, the Department and the Yukon Territorial Government continue to consult, co-ordinate and plan training activities within their respective jurisdictions. This process continues

to be the major function of the Yukon Manpower Needs Committee. During 1975-76, a total of 46,000 training days will be purchased under the AOTA Agreement. This represents 589 training spaces broken down as follows: BTSD 138, Skill-Full-time 352, and Skill-Part-time 99. It is anticipated that a total of 647 trainees will benefit from our sponsorship. In addition, a small number of trainees were sponsored to outside training institutions, primarily in British Columbia.

The Canada Manpower Industrial Training Program continues to prove a successful vehicle for upgrading the existing workforce, to alleviate continuous skill shortages within the Yukon labour force and to provide the financial incentive necessary for employers to hire and train unemployed and special needs clientele. During the year, approximately 580 Yukon workers were trained under the Program which will involve approximately 60 training contracts. Although particular emphasis continues to be placed on upgrading the skills of employed workers, approximately 60 unemployed and special needs workers have been placed in secure employment through this Program. Most of the contracts were negotiated with the mining and transportation industries.

Northwest Territories

On October 30, 1974 the Governments of Canada and the NWT entered into a new agreement on the CMTP. The agreement emphasizes a basic principle that Manpower training programs can be fully effective when there is the closest consultation and co-operation between Canada and the NWT in the planning and carrying out of activities within their respective jurisdictions. The development of comprehensive training programs with industry will be encouraged and stimulated by Canada. The planning of training activities within the terms of this agreement is a major function of the Manpower Needs Committee. During the fiscal year 1975-76, the Department purchased 62,332 training days. The total training days for skill was 23,518, while the total training days for upgrading was 34,937, and the total days for apprenticeship

training was 3,877. A total of 830 people were placed in training programs as a result of purchasing the 62,332 training days. In addition, 135 training contracts were signed under the Industrial Training Program, providing training opportunities for 325 people.

Canada Manpower Mobility Program

Yukon and Northwest Territories

Workers continue to be assisted under the Canada Manpower Mobility Program to explore and relocate to jobs away from their place of residence, to accept temporary jobs in other areas and to travel to Canada Manpower Centres to take advantage of services not available in the worker's home area. Mobility assistance is also paid to trainees who are required to travel to training centres. During the fiscal year 1975-76, approximately 55 relocation grants and 206 exploratory grants in the Yukon Territory and approximately 60 relocation grants and 70 exploratory grants in the NWT were authorized.

Job Creation

Yukon Territory

There were 28 Local Initiatives Program (LIP) projects approved in the Yukon Territory during 1975-76. These projects created employment for 153 workers (3,052 man-weeks of work) with a federal contribution of \$449,988. Employment was created in a variety of ways including construction, repair, recreational, social and community services activities.

Local Employment Assistance Program (LEAP)

LEAP projects active during 1975-76 in the Yukon were as follows:

Remedial Tutor Training Program - This program is sponsored by the Yukon Association for children with learning disabilities and is presently in its third and final year of LEAP funding. The purpose of the program is twofold; to provide training and employment for status and non-status Natives as remedial tutors in se-

lected Yukon elementary schools; and as a result of the creation of a remedial tutoring program, to upgrade the basic reading, language and arithmetic skills of elementary school children in the Yukon. This project operates with the permission of, and in close consultation with, the Department of Education for the Yukon Territorial Government. During the year 1975-76, the project employed 18 workers for a total of 540 man-weeks and with a federal contribution of \$119,846.

Yansi Teslin Wood Products - This program was sponsored by Yukon Association of Non-Status Indians. The employees of the project were status and non-status Indians associated with the Teslin Indian Band. The activities of the project involved on-the-job training in the areas of carpentry, boat building, production techniques, machinery operation, and product design through the production cedar strip freighter canoes, sleighs, toboggans, and snow-shoes for retail sales. Operations were interrupted in August, 1975 and have not recommenced. The project has one further year of LEAP funding. Sponsorship of the project is changing so that the workers may form a limited company and thereby own and manage their own project. The Department of Indian Affairs and Northern Development assisted with the proposed changeover. During 1975-76, the project employed 10 workers for a total of 360 man-weeks with a federal contribution of \$120,000. There were 10 Opportunities For Youth projects in the Yukon Territory during 1975-76. These projects created employment for 45 workers in the areas of recreation, trail clearing and repair activities, with a federal contribution of \$39,510.

Northwest Territories

During 1975-76, the Local Initiatives Program supported 43 projects in 36 territorial settlements. The project activities ranged from the production of a weekly television program to establishment of an alcohol preventive and rehabilitation centre. The total funds committed to the program amounted to \$809,578., creating some 370 to 400 jobs.

Two Local Employment Assistance Program projects are now operating and will continue to receive support in 1976-77. The total federal contribution to the projects to date has been \$122,350., creating 15 jobs and providing training for an additional 22 people. The Entrepreneurial LIP during 1975-76 had one project initiated with a total federal contribution of \$89,470. which created 10 jobs.

Special Programs

Yukon Territory

The Yukon Outreach Project continues to provide beneficial in the extension of CMC services to various communities throughout the Yukon Territory. Management and administration staff of the Yukon Outreach Project are located in Whitehorse. Outreach Workers at Whitehorse, Carmacks, Mayo, Dawson City, Ross River, Watson Lake, Teslin and Haines Junction. The target population for the Yukon Outreach Project includes all workers who have had, for various reasons, difficulty in utilizing CMC services, with particular emphasis on meeting the needs of Indian people. Outreach Workers are engaged in various projects to resolve employment and related problems in their communities and have established and maintained good liaison and co-ordination processes with community agencies and groups. Outreach Workers are delegated staff authority for the various Local Initiative Program projects in their communities and they are utilized by the Yukon Territorial Government to identify and refer workers for consideration on positions that exist in the outlying communities. There also continues to exist close co-operation between the CMC and the Outreach Project in many day-to-day activities of both organizations.

Northwest Territories

Eight Outreach projects are currently operated in the NWT. The projects at this time are an asset to the community in providing an employment service to isolated communities. These projects' activities will be expanded with a view to identifying community employment needs which can be interpreted in terms of training and job creation programs and other services which will meet these needs.

A workshop for mentally retarded persons was established during the past fiscal year. With funding approved by the NWT Vocational Rehabilitation of Disabled Persons Committee, this project will continue its operation in 1976-77.

Community Employment Strategy (CES)

Yukon Territory

On June 14, 1975 the Minister of Manpower and Immigration and the Commissioner of the Yukon Territory signed a letter of understanding regarding the implementation of a three-year development phase of a Community Employment Strategy for Yukon Territory. This phase will be directed to assisting the people who experience particular and continuing difficulty in finding and keeping satisfactory employment and who, therefore, tend to rely for most or all of their income on some form of transfer payment. The improvement of better co-ordination of existing employment and related services and programs will be an important objective of the development phase.

Northwest Territories

On January 15, 1975 the Minister of Manpower and Immigration and the Commissioner of the NWT signed a letter of understanding regarding the implementation of a three-year development phase of a Community Employment Strategy for the NWT.

In the last fiscal year the communities of Rae-Edzo, Yellowknife, Detah Village, Lac La Martre, Rae Lakes, Gjoa Haven, Cambridge Bay, Spence Bay and Pelly Bay had been designated as CES communities.

There is a CES Community Co-ordinator actively participating at Lac La Martre, Rae Lakes and Spence Bay. The community of Rae-Edzo is presently identifying possible candidates for the position of CES Community Co-ordinator.

Fifteen jobs were created through the CES program and there are an additional 30 short-term and at least five long-term jobs in the planning stage.

Plans for 1976-77

Yukon Territory

The Department intends to continue to emphasize the extension of services to all areas of the Yukon to:

- expand the scope of services through present programs and further development of itinerant services;
- examine possible ways to co-ordinate and integrate the delivery of CMC and related services to special groups of workers;
- continue to support the activities of the Yukon Outreach Project in order to reach workers not adequately served by the CMC;
- continue to ensure that employers are aware of CMC services available to them so they can obtain, retain, and upgrade their work force. Whenever possible, emphasis will be placed on the utilization of the Yukon labour force to meet local demand;
- emphasize the utilization of CMITP to upgrade the skills of employed workers without overlooking the needs of the unemployed and special needs groups. CMITP will continue to be used to upgrade workers in outlying areas and the Yukon Vocational and Technical Training Centre will also be used;
- continue to utilize CMMP to full advantage to meet the needs of the Yukon labour force; and to
- continue the well-developed Summer Student Employment and Activities Program and continue to improve and expand upon the year-round youth services.

Northwest Territories

The Department plans to increase the level of services in the Northwest Territories by:

- reviewing the need of an autonomous CMC at Norman Wells;
- establishing a fully autonomous CMC at Rankin Inlet;
- establishing a full-time itinerant service branch at Strathcona Sound;
- initiating a minimum of four additional Outreach projects, especially in the Eastern Arctic;
- initiating an integrated delivery of services by various agencies, including CMC in Yellowknife;
- the hiring of a co-ordinator for services to women;
- developing a work adjustment training capability, proceeding from discussion stages with government and private agencies;
- working with the NWT Department of Continuing and Special Education to develop basic job readiness training training support, counselling agency programs which include elements of training support, counselling agency and other supportive services at new locations as resources permit; and by establishing working committees which will review the needs of private agencies, employers and associations and presenting these needs to the Technical Sub-committee for submission to the Manpower Needs Committee;
- the Department also plans to have a coordinator for services to native people on staff very soon after the beginning of the new fiscal year.

- to bring the CES to bear on the chronic problems of underemployment and unemployment in the Arctic;
- to increase the number of native counsellors on our staff who will be better able to relate to the native population in their own language;
- to encourage viable economic development within regions of the NWT so people can realize their potential contribution to the national economy; and
- to prepare for a delivery system and training strategy in the event of a Mackenzie Valley Pipeline.

Long-term Plans

- To develop a greater training delivery system for people in their local communities;
- to assist in the design and development of training courses most suitable to people north of 60°;
- to establish Outreach counsellors in all settlements where such services are needed;

Department of National Defence (DND)

Canadian Forces

Responsibilities

The objectives of the Canadian Forces are:

to support national policies by contributing to the safeguard of Canada's sovereignty and conducting surveillance of Canadian territory, airspace and approaches; by reinforcing respect for Canadian territorial jurisdictional authority; by providing aid to civil law enforcement agencies; by operating rescue and co-ordination centres, and by providing aircraft search and rescue services; by assisting other government departments and civilian agencies in national support and development; and to work for peace and security in the world in co-operation with our allies.

To meet these objectives as they apply to Canada's North, the Department of National Defence is following the policy developed some years ago of equipping the Forces so far as is practical with material suitable for Arctic conditions and in training and using these Forces in actual northern operations. To this end, plans call for several different types of activities to be carried out each year:

regular surveillance of northern land, sea and air space;

northern deployments and exercises for land force units including airborne components;

training cruises to northern waters for ships and submarines of Maritime Command;

air transport and search and rescue missions in the North; assistance in northern engineering projects such as the building and improvement of northern airstrips.

In addition to these activities the Department recruits northern peoples for the Armed Forces and provides specialized education and training programs whenever required. The Department supports native people by ensuring that they are given equal opportunity for careers in the Canadian Forces. To this end the Canadian Forces Recruiting Centres in Montreal, Winnipeg and Edmonton have been tasked with a series of annual visits to major communities in the Yukon Territory, the Northwest Territories and Arctic Quebec.

Seventeen northern communities with high school or adult education centres have been selected for employment and career briefings by military career counsellors. The communities selected are Great Whale River, Fort Chimo, Frobisher, Churchill, Rankin Inlet, Baker Lake, Fort Smith, Hay River, Yellowknife, Fort Simpson, Inuvik, Cambridge Bay, Coppermine, Watson Lake, Whitehorse, Mayo and Dawson City. Initial visits, to advertise career opportunities in the Canadian Forces, are to commence on 29 March 1976. Follow up visits are planned to test and enrol native people who are interested in careers in the Canadian Forces. Present policy also calls for a continuing review of all of these programs and activities and the introduction of additional ones wherever warranted. Northern Region Headquarters at Yellowknife plays an important role in co-ordinating northern operations and collecting information on northern requirements which Canadian Forces might fulfill.

Review of 1975-76

Maritime Forces

As in previous years, Maritime Forces maintained a significant presence in Canada's Arctic. Sovereignty and surveillance flights, the deployment of ships into Arctic waters, search and rescue flights, flights in support of other government agencies, and training exercises continued. The permanent detachment has been re-established at Frobisher to support Maritime Command activity above 60 degrees North. In addition, Maritime Forces conducted remote sensing and communication trials in the Arctic.

In August 1975, *HMCS Protecteur* was deployed for six weeks into Arctic waters to conduct exercise "NORPLOY 75". The ship was given ice reconnaissance support by Canadian Forces Tracker and Argus aircraft. A Sea King helicopter was embarked on *Protecteur* for reconnaissance duties and the transport of personnel and stores between the ship and the various settlements visited. Northern deployments are tasked to conduct surveillance, scientific and communications trials, to assist in the replenishment of remote settlements and to conduct

special projects. Visits were made to Port Burwell, Lake Harbour, Wakeham Bay, Cape Dorset, Povungnituk, Iqviq, Sugluk, Pond Inlet and Arctic Bay. In addition to scientists from DREP, researchers from Acadia University were carried on *Protecteur*. During the deployment, an old wreck in the harbour entrance at Cape Dorset was demolished to eliminate interference with the movement of ice. An aerial survey of Nottingham and Mansel Islands was conducted on behalf of the Department of the Environment and the NWT Fish and Wildlife Department. Search and Rescue assistance was given in the hunt for a missing motor vessel and a downed helicopter. *Protecteur* also visited Nanisivik Mine with the Minister of Indian Affairs and Northern Development and the Commissioner of the NWT.

Land Forces

The Army has continued to exercise sub-units in the Arctic in both summer and winter although the number of exercises was fewer than in 1974. Regardless, an Army presence was maintained in the North. Mobile Command troops exercised in the areas of Churchill, Resolute, Frobisher, Yellowknife, Cape Dyer and Mould Bay.

Canadian Forces Station (CFS) Churchill was activated on April 1, 1974 as the Mobile Command Northern Training Centre (NTC). On September 1, 1975, in a move to streamline administrative support, CFS Churchill was made an Air Command station to be supported from Winnipeg. Mobile Command will continue to make use of the facilities and training areas located there.

Prior to this reorganization, the NTC conducted one Arctic Instructor's Course for 36 candidates in February 1975. The following month, 36 candidates were given the Senior Officer's Arctic Indoctrination Course. During the last week of July and the first week of August 1975, the staff of the NTC conducted a Summer Arctic Familiarization Course at Frobisher for 100 militia and cadets selected from units across Canada.

Since reorganization, CFS Churchill administratively supported a company-sized 10 day exercise conducted in the Churchill training area in December 1975.

The Canadian Rangers remain available to assist in tasks pertaining to coastal surveillance and search and rescue.

Further assistance was given in 1975 to the Ministry of Transport to construct airfields at three sites: Cape Dorset, Pond Inlet and Eskimo Point. As in 1974, 1 Construction Engineering Unit (1CEU) in Winnipeg had primary responsibility for technical, logistical and administrative support of these projects. Airlift and resupply was provided by Air Transport Group using CC130 Hercules to move heavy loads into the sites in the spring and Buffalo aircraft for weekly resupply.

1 Field Engineer Squadron continued blasting and drilling operations at Cape Dorset and 1 Airborne Field Engineer Squadron continued construction at the Eskimo Point site. Both airfields were within one foot of final grade or 88 per cent complete at the end of the 1975 construction season. They are, in fact, now being used by military and civilian aircraft. In addition, work on the airfield at Pond Inlet was continued by a crew of Inuit supervised by 1 CEU. The airfield is now 65 per cent complete.

Construction of the Eagle River Bridge at Mile 237 of the Dempster Highway, scheduled to start in August 1975, was delayed because of lack of access to the site. The construction schedule has been revised and work is now scheduled to start in July 1976 and carry on throughout the winter.

Operation TRELAR, the rehabilitation of CFS Alert, started in June 1975 and will run for three years. Work will commence each June and cease each December. During 1975 an 80-room, two storey barrack block with individual room thermostats was completed. New runway and runway approach lights (VASIS and REL) were installed on the airfield. A 108 x 31 foot transmitter building was erected and a diesel generator installed. 1 CEU provided the on-site supervision of military tradesmen selected from many CF bases and militia units across Canada.

The Canadian Forces Mapping and Charting Establishment carried out Field Survey Operation "ARCTIC 75" on Southampton Island, NWT during July and August 1975. Horizontal and vertical control points were established to provide data for 180 new maps of 1:50,000 scale covering approximately 126,000 sq km (50,000 sq mi). A Geodetic Control framework for the island was also established. The survey team was supported by 422 Helicopter Squadron, an Otter and crew from the Air Reserve and airlift by Air Transport Group of Air Command.

Air Forces

During annual BOX TOP airlifts, Hercules aircraft transported approximately 900 tons general cargo including drummed fuel, vehicles, building materials, rations, etc. to CFS Alert. Also, approximately 90 flights were required to airlift 330,000 gallons of bulk diesel fuel to Alert.

Hercules aircraft continue to provide weekly scheduled services and special flights as required to Canadian Forces Communications stations at Alert, Inuvik and Northern Region Headquarters at Yellowknife.

Also, Buffalo and Hercules aircraft were involved in 600 hours flying time in support of northern airfield construction programs at Cape Dorset, Eskimo Point and Pond Inlet.

Two Twin Otter aircraft are located at 440 Squadron Detachment, Yellowknife and are utilized for communications and, as required, search and rescue in support of primary search and rescue aircraft.

CF-5 tactical fighter aircraft of 433^e *Escadrille tactique de combat*, Bagotville, P.Q. and 434 Tactical Fighter Squadron Cold Lake, Alta., flew a variety of tactical support and photographic reconnaissance sorties in the North. These flights, supported by 437 Transport Squadron CC137 Boeing air-to-air refueling aircraft, were flown from southern bases to such northern locations as Alert, Fort Simpson, Fort Smith, Whitehorse, Inuvik, Hay River, Yellowknife, Rankin Inlet, Frobisher and the North Pole.

The Canadian Forces Air Demonstration Team the "Snowbirds" again opened their display season with Air Shows in northern Canada at Hay River, Yellowknife and Inuvik, NWT, and Whitehorse and Watson Lake, YT.

Argus aircraft maintained a minimum schedule of three 40-hour patrols per month, operating from bases at Frobisher, Edmonton, Yellowknife, Goose Bay, and Thule, Greenland. Approximately 1300 hours were flown by Argus operating in the Arctic. Although the primary purposes of Argus flights were sovereignty protection and surveillance, many were flown in support of other government agencies.

During the ice-season most northern patrols carried MOT ice observers and conducted ice reconnaissance as a secondary task. Patrols were also assigned photographic tasks on behalf of DIAND, DOE and EMR, such as the investigation of off-shore oil exploration and drilling activity on the archipelago, and reporting on population movement. Scientists and observers from other government departments were frequently carried, conducting such activities as investigation of seabird and marine populations in the Beaufort Sea and ice research along Arctic shores.

The DEW Line, consisting of four main sites and 17 auxiliary sites, continues to provide military presence in the Arctic. These military installations stretch from Cape Dyer on the East coast of Baffin Island to Komakuk Beach near the Alaskan Border. While all sites are operated by the United States Air Force, the airfields at Tuktoyaktuk, Hall Beach and Cambridge Bay are operated by MOT.

During the June-July 1975 period, the Air Reserves carried out deployments in support of Northern Region as follows: 418 Air Reserve Squadron — Yellowknife; 401/438 Air Reserve Squadrons — Goose Bay; and 400/411 Air Reserve Squadrons — Churchill.

In addition, the Air Reserve supported "Arctic 75" during the same period at Coral Harbour, NWT.

Plans for 1976-77

Maritime Forces

is intended to continue the present level of surface and air activity consistent with the priorities of other tasks and responsibilities of Maritime Command. Support to other government agencies will be provided when practical. As ships and aircraft of the Canadian Force become more familiar with the North, the level of knowledge about this region will increase and it is intended to share that knowledge in every possible way.

Land Forces

northern training will be accomplished by each combat group conducting two company size exercises annually, each of approximately 10 days duration, North of latitude 60°. Three of these exercises will take place in the CFS Churchill area and the remaining three will be conducted elsewhere in the Arctic. One, and possibly two, Arctic Instructors Courses will be conducted for 36 candidates. In addition, there will be one Senior Officer Arctic Familiarization Course for 36 candidates.

Work on the Eagle River Bridge is scheduled to commence in July 1976 and carry on throughout the winter. Completion is scheduled for July 1977.

Airfield construction at Cape Dorset, Ekimo Point and Pond Inlet will resume in April 1976. Cape Dorset and Eskimo Point airfields should be completed during the 1976 construction season. Pond Inlet due for completion in 1977. Spence Bay was named as the sixth site for northern airfield construction. Work is due to start in April 1977, however the heavy engineering equipment and the accommodation trailers will be shipped to the site during the summer of 1976.

Air Forces

Hercules aircraft will continue to provide regularly scheduled service to Alert, Inuvik and Yellowknife. Also Buffalo and Hercules aircraft will be used during the spring, summer and early fall to provide support for the northern airfield construction program, and mapping and charting. The Twin Otters at Yellowknife will continue to provide essential service to Northern Region Headquarters.

CF-5 Tactical Fighters of 10 Tactical Air Group will fly operational support and photographic reconnaissance missions to several northern locations. Most missions will be flown from southern bases and supported by 437 Transport Squadron air-to-air refuelling aircraft.

The Snowbirds, the Canadian Forces Air Demonstration Team, will again open their 1976 season with air shows in northern Canada at Fort Smith, Yellowknife, Norman Wells and Inuvik, NWT and Watson Lake and Whitehorse, YT.

Chief of Research and Development Branch

Responsibilities

The Chief of Research and Development (CRAD) is responsible for the overall conduct of the research and development activities of the Department. He directs and controls the research establishments, their resources and programs, and conducts development programs leading to military hardware. He formulates and recommends research and development policies and plans and provides the necessary guidance and co-ordination for their implementation. CRAD ensures that knowledge of actual and anticipated advances in science and technology is used to support Departmental decisions concerning the development, engineering, design, procurement, installation, maintenance and operation of all new equipment, supplies and systems; and he provides an interface between defence research and development activities and the remainder of National Defence Headquarters and the Canadian Forces.

In the context of Northern activities, CRAD is responsible for providing to the Canadian Forces scientific knowledge, experience and hardware options to solve

problems associated with military operations in high latitudes. In discharging this responsibility, CRAD sponsors and undertakes research and development projects aimed at acquiring relevant knowledge and equipment.

Review of 1975-76

Research was conducted at CRAD's laboratories across the country; these studies are functional and multi-disciplinary. Because the broad work categories outlined above overlap in several of these laboratories the text that follows has been organized without continual reference and credit to the performing research establishment. The following list is therefore presented to give some idea of the number of these involved and the general field of interest of each.

Defence Research Establishment

Atlantic – Arctic acoustics;

Defence Research Establishment

Valcartier – Military engineering, remote sensing;

Defence Research Establishment

Ottawa – effects of the environment

on operations in the North, protection

of the individual soldier, remote

sensing, military radar and commu-

nications;

Defence and Civil Institute of Environ-

mental Medicine – protection of the

individual soldier, the effects of the

environment on operations in the North,

remote sensing from the human en-

gineering point of view;

Defence Research Establishment

Suffield – military engineering, protec-

tion of the individual soldier;

Defence Research Establishment

Pacific – Arctic acoustics.

Research in the North has also been supported by means of contracts to universities, non-government research organizations and, to a small degree, Canadian industry. Facilities and goods and services were provided to other government agencies and close collaboration was maintained with research and development agencies in other countries, especially the United States, Great Britain and Denmark.

Research Directed to Protecting the Soldier and His Equipment

The work covered under this heading is concerned with improving certain aspects of clothing and physiological and immunological research. As in previous years, scientific staff accompanied military exercises in the Canadian North to familiarize themselves with clothing and equipment problems under realistic conditions of use and to conduct trials of promising new protective items under severe winter conditions.

On Exercise Honky Tonk, held at CFS Churchill, Manitoba, field experiments with a new cold-weather head protector were conducted and a thermal imaging camera, modified for outdoor use, was used to provide information on heat distribution within tents and clothing systems. One scientist accompanied Exercise New Viking, Serial 87 at Fort Churchill and Coral Harbour to gain first-hand experience concerning environmental problems which influence military operations in the Arctic.

On Exercise Kool Stool II, held in February 1976 at CFS Churchill a large number of equipment items were tested, including such items as an Arctic survival tent, downed airman power source and casualty bag, handwarmers, battery heaters and tent heaters.

During a previous exercise, disturbances were detected in the quantity and quality of sleep of subjects who slept in sleeping bags inside tents at ambient temperatures of -30 to -40°F . Other researchers have found that similar sleep disturbances in other conditions have resulted in reduced mental performance of the subjects. An array of tests were performed on six subjects during Exercise Kool Stool II to determine the magnitude of sleep disturbances as a function of environmental conditions and also to determine the effects on performance (memory, alertness, vigilance, etc.) caused by the combination of stresses encountered during Arctic operations. There appears to be a relationship between sleep and thermoregulation.

Evaluation of psychological tests for selection of personnel for Arctic duty was also undertaken, together with assessment of cold stress and methods of measuring it. A sleeping bag using aluminized mylar excelsior as an insulator



Arctic Training, CFS Churchill

instead of down has been developed. The Aikelsior provides about 20 per cent more efficient insulation than down and is much cheaper. Also recently developed, is an inflatable sleeping bag in which the thickness of the insulation can be varied by changing the air pressure. A casualty sleeping bag based on the same principles has also been developed, with access slots to permit treatment of injured or wounded areas without having to remove the casualty from the bag. A human engineering evaluation of the Armoured Vehicle General Purpose (AVGP) for the Canadian Forces was carried out. A report presenting results and observations obtained during cold weather is in preparation.

A study of energy expenditure and calorific requirements in cold environments (attempting to determine the mechanism(s) responsible for the rapid depletion of body fat resulting from work or exercise in environments below 0°C. Both male and female subjects are being studied.

Repellent-impregnated jackets were tested and found promising for the protection of personnel from biting flies.

Effects of the Environment on Operations in the North

The work done under this heading is concerned with the effects of the environment on systems and machines used by the Canadian Forces as well as with the fundamental environmental parameters themselves.

Environmental Studies

In 1975, the final data-gathering phase of a study of ice drift in Robeson Channel and the phenomena influencing it was carried out. A three-man party spent five weeks obtaining additional oceanographic and tidal data. Five tide gauges were set up, two on each side of Robeson Channel and one farther south in Kennedy Channel, with a view to obtaining information on the propagation of the tidal wave as it progressed from the Arctic Ocean and also on relationships between the side of Robeson Channel and the other.

The tides in northern Nares Strait are principally diurnal and semi-diurnal, with difference between high and low water levels increasing with distance from the Arctic Ocean. The occurrence of high and low water on the Ellesmere Island side of Robeson Channel is roughly one hour earlier than on the Greenland side.

Processing of the 1974 data is almost complete and analysis based on the entire program will then be possible.

A study of the properties of snow as related to vehicle mobility was undertaken, with plans for a field investigation starting in early 1976. Plans were also formulated for a study of the low temperature operating limits of vehicles.

A reconnaissance investigation of currents and water structure in Fury and Hecla Strait was carried out in April and May 1975. One scientist with a locally employed assistant worked out of Igloodlik, using snowmobiles for transportation. Accommodation, laboratory space and other facilities were arranged through the Eastern Arctic Research Laboratory.

A great deal of important information was obtained, which is proving invaluable in designing a larger program for 1976. Very strong tidal currents and rapid mixing of water in the strait make the study more complex than had first been anticipated.

In July, three strings of current meters were set up at the east end of Hudson Strait from *CNAV Quest* and left for two weeks. Only two of the strings were recovered and the data from them is now being processed.

Environmental conditions affecting underwater acoustics were investigated in Hudson Strait, Hudson Bay and Foxe Basin. Measurements included oceanographic parameters and acoustic noise and propagation, making use of shipboard equipment and maritime patrol aircraft dropping acoustic charges. Acoustic measurements were also made in Barrow Strait, in open water in September and under shorefast ice in April.

Geomagnetic data was collected in the vicinity of Resolute in the fall. A small continuing effort in this field is maintained at Resolute.

Remote Sensing

Work on Landsat (ERTS) data continued under contract with an attempt to assess the cartographic applicability of the data. Imagery for selected areas was chosen, based on availability of ground truth and various output formats were evaluated. Computer-compatible tapes were then made and vegetation maps generated. Areas included Lac Saffrey in northern Quebec and Fort Simpson.

Plans are well advanced to apply optical processing methods to SLAR imagery of sea ice, but delays in construction of the necessary equipment prevented a start being made in 1975.

A low light level TV using an image intensifier was tested aboard *CNAV Quest*. It proved useful during pre-dawn and dusk periods, but provided no assistance in the absence of starlight or in fog.

Military Engineering

A trial was held near Inuvik to test the suitability of commercial explosives for use in permafrost. Excavations were made in various soil types including sand, silt-clay, and silt with high ice content. It is hoped that thorough investigations into cratering in permafrost will be conducted over the next three years.

An experiment, underway for the last three years, at Resolute and Alert was completed and temperature-response data for ordnance stores by inert simulation gathered.

A nominal 75 W zinc/air primary battery capable of providing superior performance capability down to -40°C (over 50 per cent of room temperature capacity is available) has been developed to the prototype stage for a radio navigational beacon application. Studies directed at improving the low temperature performance of the zinc electrode are beginning to show promising results.

Investigation of ways of improving the low temperature performance of the lead/acid battery has revealed the beneficial effect that addition of carbon to the positive plate has on increasing the low temperature electrical output. The practical implications of this approach are being investigated. Research directed at improving the charge acceptance at low temperatures has led to a better understanding of the charging process.

at the positive plate of the lead/acid battery. Experimental electrochemical data obtained at temperatures down to -50°C have been successfully analyzed using modified versions of kinetic models proposed elsewhere. Studies are in progress to confirm the validity of these models through independent measurements of the surface morphology and composition of the positive plate.

Lithium/organic electrolyte primary batteries have been evaluated for an Emergency Locator Transmitter (ELT) application and have been found to give good performance to extremely low temperatures (over 75 per cent room temperature capacity at -40°C). Studies are under way to investigate some of the problems preventing practical use of these batteries. These problems include reactant leakage and slow development of operating voltage under high drains at low temperatures. Other promising primary batteries are evaluated for possible use at low temperatures as they become available.

Studies are being conducted on the low temperature characteristics of a 12W hydrogen/air fuel cell and on the field production of hydrogen from metal hydrides at low temperatures.

Communications

The investigation of the feasibility of using the Anik satellite in communicating with the high Arctic is continuing at Eureka.

Protection of the environment from military operations

Testing of the non-aggressive grouser for tracked vehicles continued. Various design modifications were made to facilitate commercial production, and studies are continuing to find a lighter substitute for polyurethane in its construction.

Trials of new pesticides and of improved spraying techniques were continued. Baygon OSC was adopted for biting fly control at most Canadian Forces bases in 1975. Studies of growth regulators for blackfly control were also undertaken.

Research Contracts 1975-76

With McGill University for:

research on field mobility, correlation devices and contact mechanisms; evaluation of terrain; vehicle mobility and trafficability.

With B.C. Research Foundation for:

research on juvenile hormone analogue as an insect regulator.

With Queen's University for:

revision of Canadian Forces Pest Control Manual.

With Geostudios Ltd. for:

evaluation of LANDSAT imagery in cartography.

With Bombardier Company for:

evaluation of optimum tractive elements for marginal terrain vehicles.

Extramural Grants

Military Land Transportation and Vehicle Engineering

| (University) | (Title of Research) |
|------------------|---|
| New Brunswick | Couples Electro-hydraulic Suspension System |
| British Columbia | Evaluation of Terrain Classification |
| Toronto | ACV Guidance and Control |
| Toronto | Skirted Air Cushion Suspension |
| Carleton | Characteristics of ACV Terrain Interaction |
| RMC | G geared variator analysis |
| RMC | Stabilization of Compressible Terrain |

Geotechnical Aspects of Defence Operations

| | |
|------------------|---|
| Memorial | Iceberg cross-section echo |
| Laval | Détection sur des images ERTS et sur photographies aeriennes |
| Guelph | Orthophoto |
| Memorial | Prediction of iceberg drift off Eastern Canada |
| Laval | Interaction de la glace avec les ouvrages offshore |
| McGill | Thaw stability of permafrost |
| McGill | Electrical properties of sea ice |
| McGill | Water stress on the ice floe |
| Memorial | Dynamic analysis of ice-structure interaction |
| Laval | Permafrost discontinuities dans le Nord du Québec |
| Toronto | Natural and artificial electro-magnetic fields in the audio frequency range |
| British Columbia | Prediction of geomagnetic micro-pulsation activities |
| RMC | Thermal effects in permafrost |
| Royal Roads | Remote sensing surveillance |

Military Preventive Medicine

| | |
|-----------------|---|
| Manitoba | Colonization and diapause in <i>Aedes</i> mosquitoes |
| Waterloo | Juvenile hormone for mosquito control |
| Western Ontario | Neural processing of the olfactory system of biting flies |
| Manitoba | Cold aerosols and ULV mists for insecticides |
| Saskatchewan | Arboviruses in tundra area |

Chemical Energy Sources

RMC Low temperature calorimetry

Physiological and Metabolic Stress in Military Environments

Toronto The influence of diet composition and feeding pattern on cold tolerance in rats
 York Physical fitness and tolerance to environmental stresses
 Calgary Respiratory and cardiovascular responses to cold water immersion
 Toronto Physiological responses to sudden immersion in cold water
 Laval Assessment of cold reactivity by autonomic nervous system responses
 Alberta Physiological and endocrinological effects of heloc-induced hypothermia

Plans for 1976-77

The research program carried out under the Chief, Research and Development is a continuing one and much of the work will be pursued in 1976-77. However, emphasis does change as results of research are adopted and new problems tackled under the broad headings used to describe our research.

Long-term Plans

Research is conducted both in the laboratory and in the field. Almost every aspect of science is involved, and for convenience the work is categorized as follows:

- research directed to protecting the soldier and his equipment from the environment;
- research on the effects of the environment on systems used by the Canadian Forces to generate and transmit information necessary for command and control, and on the effects of the environment on the Canadian Forces ability to conduct operations in the North;
- research directed to the protection of the environment from military operations .

Defence Aspects of Social Research

Calgary Waste management for cold climates

Military Engineering Research

Calgary Microstructural investigation of frost action in building materials and soils
 Calgary Temporary enclosures for the North
 Calgary Development of engineering materials for construction in northern Canada
 Alberta Fundamentals of shipboard icing
 Laval Small space heaters for use under Arctic conditions

Department of National Health and Welfare

Health

Health Programs Branch

Responsibilities

To ensure that all Canadians regardless of income or geographical location, have access to an acceptable level of health care services, at reasonable cost according to their needs. The Branch administers the Hospital Insurance and Diagnostic Services Act (1958) and the Medical Care Act (1968) which enable the Federal Government to contribute, on the average, half of the costs of the insured services of the national programs incurred by provincial and territorial hospital insurance plans and medical care insurance plans which meet certain specified criteria of the federal legislation. These criteria are: comprehensiveness of the insured services; universality of the coverage which must be provided under equal terms and conditions to all eligible residents; portability of the coverage when an insured person is temporarily absent or moving to another province or territory; and administration on a non-profit basis by a public authority.

The federal legislation gives each province and territory considerable leeway in determining the administrative arrangements for the operation of its plans, in deciding how its share of costs will be financed (e.g. through premiums, sales tax, other provincial revenues or by a combination of methods), in deciding whether coverage will be on a voluntary or compulsory basis and whether or not services additional to those of the national programs will be included in the provincial plans. Any additional benefits are, of course, not eligible for cost-sharing.

In 1975-76, the Federal Government contribution, estimated at \$2,390 million, is its share of the provincial and territorial hospital insurance plans. The federal contribution to the Yukon is estimated at \$1.76 million or 62.6 per cent of the cost of insured services of the national program covered by the Yukon Hospital Insurance Plan. The corresponding figures for the Northwest Territories Hospital Insurance Plan are estimated at \$4.1 million or 44.6 per cent.

In 1975-76, the Federal Government contributed approximately \$840 million under the Medical Care Program as its share of the provincial and territorial medical care insurance plans. The estimated federal contribution to the Yukon for costs incurred by the Yukon Health Care Insurance Plan in 1975-76 is \$767,000 or 50.4 per cent of the costs of insured services. The corresponding figures for the Northwest Territories Health Care Plan are \$1,381,000 or 45 per cent.

The Branch is also responsible for the management of the Health Resources Fund, which was established in 1966 in the amount of \$500 million to be spent over the following 15 years to assist the provinces in meeting the national needs for new and improved facilities for the education of health manpower and for health research. Another major responsibility is the administration of an expanding program of health contributions for research, and innovation in methods of delivery of health care. The Branch also has a major health economic and statistics division which provides economic and social research support for health policy planning and development. Consultant services are also provided by the Branch to the provinces and territories when required both in connection with the operation of their health insurance plans and also to assist them in planning and implementing changes in their health care delivery systems.

Review of 1975-76

There was a substantial improvement in the eligibility and portability provisions of the provincial and territorial hospital and medical care insurance plans. The Federal Government continued to discuss with the provinces ways and means of improving flexibility in the federal-provincial arrangements with particular emphasis on promoting a more efficient and economical health care system. The Health Economics and Statistics Division is maintaining a medical care data bank to provide uniform data relating to the operations of the medical care program to enable federal, provincial and territorial governments to carry out program evaluation and program planning. Special emphasis was given to the development of guidelines and standards in a number of areas.

Plans for 1976-77

The provision of financial support to the provinces and territories, consultant services, advisory and research support will be continued.

Further integration of the major health services and continued work in developing alternatives to reduce the growth rate of high cost services in return for the extension of cost sharing in lower cost alternative services will be undertaken.

Long-term Plans

In view of the Federal Government's notice to the provinces of its intentions to terminate the agreements under the Hospital Insurance and Diagnostic Services Act in 1980, a major aim of the Department will be undertaking a review of health programs and legislation with the provinces.

The Canada Health Survey has been planned as a continuing, national, household survey of the health status of Canadians. This survey will help governments to assess needs, develop appropriate programs to meet them, including those related to lifestyle and environmental factors, and to plan for better utilization of existing health care resources by identifying health and illness factors in the Canadian economy.

Fitness and Amateur Sport Branch

Northern Games – The Northern Native Games were held at Fort McPherson in the Northwest Territories and brought together Indians, Inuit, and Métis for friendly competitions and cultural and social activities.

Yukon Native Brotherhood – A contribution was made to the Yukon Native Brotherhood during the 1975–76 fiscal year through the Recreation Canada Directorate of the Fitness and Amateur Sport Branch. This contribution helped support activities which were not only developmental in nature but also inter-band, regional and provincial. The following are areas in which contribution funds were expended:

- inter-band sport and recreation events;
- leadership development clinics and seminars;
- skill teaching or training clinics;
- consultative and technical services;
- regional and provincial competition of a developmental nature, leading to integration into all Canadian competitive events.

Health Protection Branch

Non-Medical Use of Drugs Directorate

Responsibilities

The Directorate is concerned with physical, mental, and social health problems associated with the non-medical use of mood-altering substances. The term, mood-altering substance, is defined to include alcohol, tobacco, licit and illicit substances. In specific terms, the objectives of the Directorate are:

- to achieve lifestyle conditions consistent with physical, mental, and social health;
- to prevent problems associated with the use of mood-altering substances;
- to cure acute and long-term problems associated with the non-medical use of mood-altering substances; and
- to restore casualties of non-medical drug use to physical, mental, and social health.

Part of our activities include articulation and dissemination of program concepts and methods, initiation of steps to achieve their effective use in current practice, and promotion and stimulation of the adoption of effective means of prevention treatment and rehabilitation. These activities are often carried out with the assistance of extramural agencies which are supported by contributions from the Non-Medical Use of Drugs Directorate.

Review of 1975–76

During 1975–76, three projects were supported in the North in the amount of \$55,000; one as a detox and rehabilitation centre in Yellowknife; one to hold a territorial youth conference in Yellowknife; and one to support a half-way house in Whitehorse. In addition, two projects were supported under the student summer employment program in co-operation with the alcohol and drug service of the Government of the Northwest Territories employing 16 students with expenditures totalling \$35,900.

Plans for 1976–77

A number of projects are currently under consideration or in the development stages.

Medical Services Branch

Responsibilities

Through its Northern Health Activities, the Medical Services Branch of the Department of National Health and Welfare is responsible for developing total health care in the North. The Branch plays a dual role in providing health services to all northern residents, acting not only in its federal role but also in the capacity of a provincial health department in both Territories. The Territorial Councils, however, enact health ordinances. In addition, the Governments of the Yukon and the Northwest Territories have assumed responsibility for the operation of health insurance plans and they have statutory responsibility for the establishment, maintenance and management of hospitals.

Yukon Territory

Review of 1975–76

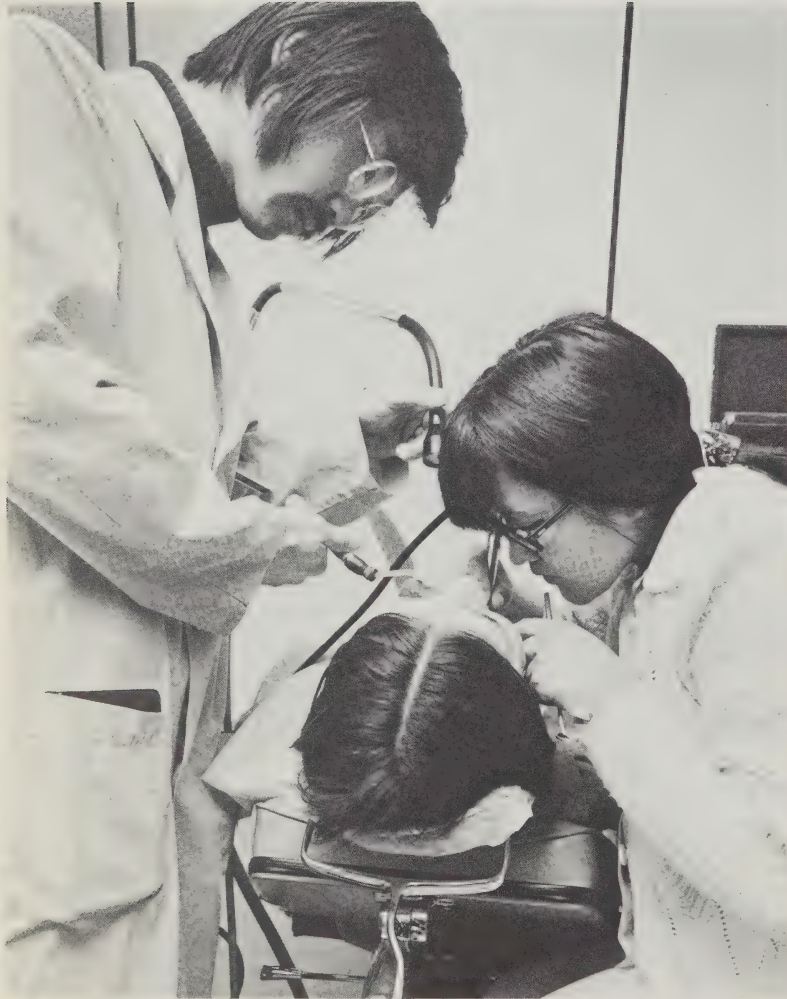
In 1975–76, the Yukon completed its first year as a region separate from the former Northern Region. Responsibility for Communicable Disease Control was transferred from the Northern Region to the Yukon in December. Certain support services, however, continued to be provided to the Yukon Region by the former Northern Region which has now become the Northwest Territories Region. These services include computerized Chronic Disease and Tuberculosis Control, which is also utilized by the Indian Health Services in Alberta and Saskatchewan.

A post graduate training program designed to increase the diagnostic skills and clinical acumen of nurses employed in isolated communities was provided at several universities. Five nurses from the Yukon were enrolled this year. In addition, two nurses participated in a Nursing Administration Course.

As part of Yukon Region's Safety Program, three nurses attended a winter survival course and three took defensive driving training.

During the year three dental therapists trained at Dental Therapy School in Fort Smith, NWT worked in the Yukon. The three therapists are all young Northerners. Their presence enabled the dental program to increase the volume of quality dental care and preventive dental education throughout the Territory. In 1975, the Yukon Region and the Yukon Department of Education organized a plan for the distribution of fluoride tablets to all rural school children (kindergarten through Grade 7). This program commenced on January 4, 1976.

Several cases of diphtheria in the NWT were reported in November and the subsequent public reaction to mass media accounts precipitated a diphtheria scare. In a two week period, over 4,000 individuals were immunized against the disease by the Yukon Health Services. No cases were reported in Yukon.



*Instructor, Dental Therapist and patient,
Fort Smith School of Dental Therapy*

Facilities Completed in 1975-76 *Pelly Crossing* – Two units were added to the existing health station trailer complex to upgrade the facility to Health Centre Status.

Watson Lake – Construction of Watson Lake Hospital was completed in February 1976. The new facility was designed to meet both the immediate and long-range health needs of the community.

Whitehorse – The boiler room at Whitehorse General Hospital was enlarged to accommodate the installation of an additional boiler. New switching apparatus was installed to upgrade the emergency electrical generating capacity of the hospital.

Plans for 1976-77

Whitehorse – Facilities will be rented to accommodate dental health and public health offices. These facilities will probably be located in a new downtown office complex.

Yukon Manor, a former residence building on the grounds of the Whitehorse General Hospital, will be renovated to accommodate the Yukon Regional Office.

A new incinerator will be installed at Whitehorse General Hospital.

Phase two of the boiler installation at Whitehorse General will be completed.

Long-term Plans

Continual efforts will be made to develop an integrated system of health services that will meet the needs of Yukon residents, to develop adequate levels of environmental health, to expand coverage in the Yukon school dental health program, and to promote community participation and involvement in health care. Plans for the territorial administration of health are in process of evolution subject to the involved levels of government being able to work out arrangements acceptable to Yukon residents.

Northwest Territories

Review of 1975-76

Close relationships were maintained with the Yukon Region for the provision of certain special services, particularly the Computerized Tuberculosis and Chronic Disease Control, and the Buildir

Construction and Maintenance Programs. Responsibility for Communicable Disease Surveillance and V.D. Control in the Yukon was assumed by the Yukon Region on December 1, 1975.

An additional shared program started in October 1975 with the appointment of a Regional Health Engineer to serve both the Yukon and Northwest Territories Regions.

The Northwest Territories Region assisted the Alberta Region also in the operation of X-ray Clinics for TB control within that province and in the provision of computerized recall for tuberculosis follow-up.

Within the Northwest Territories, the Region provided direct physician services in all centres except Yellowknife and Inuvik, which have private practitioner services. A single private practitioner also operates in Inuvik and a part-time physician provides ophthalmological service in Fort Smith.

Included in the federal program are specialist ophthalmological services in Yellowknife and Mackenzie Zone. A psychiatrist, appointed in January 1976, also serves the Mackenzie Zone. Elsewhere, specialist services are provided by contract with the Medical Faculties of the Universities of Alberta, Manitoba, Toronto and McGill in zones from west to east.

General hospitals with surgical capability are operated at Inuvik (100 beds) and Frobisher (35 beds). There are cottage hospitals in Fort Simpson and Rae-Edzo and Nursing Stations in settlements throughout the Territories.

Over 20 staff physicians provided visiting services to all settlements, but commencing in November 1975 visiting service to settlements in the Keewatin zone except for the Belcher Islands was turned over to the Northern Medical Unit of the University of Manitoba. Churchill-based physicians of this unit now travel to the settlements of Keewatin on a regular schedule.

Dental care for territorial residents is provided by staff dentists resident in Inuvik, Frobisher and Churchill, by private practice contract in the Mackenzie Zone and by graduates of the Fort Smith School of Dental Therapy, resident in local settlements. This school has 21 students enrolled for the academic year 1975-76, 12 in the first year and nine in the second year of a two year course. Of 17 graduates of the previous two years, three are giving Dental Therapist Service in the Yukon, 11 are serving in the Northwest Territories, one has gone on to take full dental training in southern Canada and two resigned but have re-applied and are currently awaiting re-appointment to Northwest Territories locations. This has been a most successful program. Orthodontic service is made available in the city of Yellowknife by contract with an Edmonton-based orthodontist.

The community Health Worker Program was maintained. A training course was given at Pangnirtung for residents of the Eastern Arctic during the year.

The Fort Smith School for the training of Certified Nursing Assistants continued in operation. Their graduates are employed in hospitals within the Northwest Territories.

Fourteen nurses from the settlements attended the Clinical Training of Nurses programs for graduate nurses operated by the University of Alberta, the University of Manitoba and the University of Western Ontario. Two nurses were enrolled in the Dalhousie University Outpost Nursing Diploma Course. Approximately one in three of all Nursing Station nurses have had benefit of the Clinical Training of Nurses Course which is approaching the established goal of 40 per cent.

A consultant on alcoholism was added to Regional Staff in February 1976.

The arsenic study alluded to in last year's report was extended to about 10 per cent of the population of the Yellowknife area. An indepth clinical assessment of somewhat less than 10 per cent was also carried out. Parallel environmental studies were carried out by other government departments.

Baffin Zone

Frobisher Bay General Hospital – Hospital stores were expanded by use of leased accommodation. The hospital building was reroofed and its mechanical ventilation system was modified. Numerous minor renovations were initiated to improve utilization of present space and to upgrade techniques.

Pangnirtung – A residence consisting of two prefabricated sections was delivered and installed to accommodate a dental therapist assigned to the community. The new nursing station, erected in 1974-75, was completed and performed with distinction during the catastrophic wind storm on January 24, suffering only negligible damage and by virtue of its emergency power plant provided heated and lighted shelter for a large number of people whose homes were destroyed or rendered uninhabitable.

Cape Dorset – A residence identical to that provided at Pangnirtung was delivered and installed for accommodation of the dental therapist.

Igloodik – A new nursing station was completed and placed in service. This site-constructed building was erected in approximately five months. It is a three nurse station and besides five adult and three pediatric beds, encompasses diagnostic, treatment, dental and public health services. A full range of mechanical services are included in the building with considerable back-up capabilities including an emergency power plant.

Clyde River – Replacement boilers and associated mechanical modifications were completed at this location. An emergency power plant was obtained for 1976 delivery and installation.

Broughton Island – The boilers were replaced, minor mechanical renovations were effected and an automatic standby diesel power plant was installed.

Hall Beach – Emergency power service was provided by installation of a diesel electric unit.

Inuvik Zone

Inuvik General Hospital continued to require considerable attention, major repairs were required to restore aging mechanical services. The addition and renovations commenced in previous years were completed. The Inuvik nurses' residence was internally modernized and partially refurbished.

Keewatin Zone

Eskimo Point – A double prefabricated residence was delivered and installed to provide accommodation for personnel of the dental therapy program.

Rankin Inlet – This community received a residence for the dental therapy program similar to Eskimo Point.

Repulse Bay – A self-contained emergency power plant was purchased for installation in the summer of 1976.

Chesterfield Inlet – The planned prefabricated nursing station was under construction in Calgary. Delivery and installation are to follow in the summer of 1976.

Mackenzie Zone

Spence Bay – An addition was completed on the nursing station adding areas for public health and dental services. A diesel electric emergency power plant was installed.

Lac la Martre – A prefabricated building was constructed in Calgary and shipped for installation before April 1. This will provide accommodation for a nurse and diagnostic, teaching and treatment facilities.

Snowdrift – A sewage treatment plant was installed for trial and study. An emergency power generation service will be incorporated in the Health Station.

Fort Liard – A diesel powered emergency electric plant was installed and placed on standby service.

Fort Rae – A clinic building was prefabricated in Calgary for delivery and placement in service during the 1976 construction season.

Strathcona Sound – Support was provided to the Strathcona Sound project in respect of medical and public health facilities.

Plans for 1976–77

Three major capital works are scheduled. These are listed in order of priority following completion of the phased projects at Chesterfield Inlet, Fort Rae and emergency power plants where equipment has already been purchased.

Eskimo Point – Construction of a new four-nurse, 10 bed station with diagnostic, treatment, dental and public health facilities. This unit is scheduled for completion by the end of the 1976–77 fiscal year. It will replace the present nursing station which is undersized, deteriorated and lacks many essential features.

Pond Inlet – A new nursing station is planned for the 1976–77 construction season, to replace the inadequate trailer station. It will contain living quarters for three nurses, and beds to accommodate four adults, three children and one maternity patient. It will contain full diagnostic, treatment, and public health facilities such as laundry, mechanical services and standby power.

Frobisher – Two residences located near the hospital will house equipment required to facilitate response to medical emergencies. Some further upgrading and rearranging of the hospital is under consideration.

In addition, the relocation of prefabricated units for transients and dental therapists, will proceed as funds are made available. Plans for 1977–78 include a new Nursing Station at Resolute, residence addition at Edzo, and a residential building for a dental therapist.

Long-term Plans

There will be continued participation in programs to improve and expand medical communications and to investigate the practical value of telemedical facilities in isolated communities.

Efforts will continue to develop an integrated system of health services that will meet the changing needs of Northwest Territories residents; to develop adequate levels of environmental health and to promote community participation in the provision of health care.

Welfare

Income Security Branch

Canada Pension Plan

The objective of this program is to provide basic income protection to all Canadians and to pay benefits to eligible participants who are retired, disabled or survivors of eligible participants. Benefits payments for the fiscal year 1975–76 were: In the Yukon Territory, \$380,000, and in the Northwest Territories, \$249,000 for a total of \$629,000.

The continuing responsibility for 1976–77 and for long-term plans is the same, namely, the payment of Canada Pension Plan Benefits.

Income Maintenance Branch

Family Allowances

Family Allowances are paid in respect of children under 18 years of age, living in Canada and maintained by parents or guardians. At least one of the parents must be a Canadian citizen, a landed immigrant or a non-immigrant who has been admitted to Canada for a period of not less than one year and whose income during that period has been subject to Canadian income tax.

The monthly allowance paid in 1975 was \$22.08 per child. The legislation provides for annual escalation of allowance in January on the basis of the cost of living, but this escalation was suspended for 1976 and payment in 1976 is at the

same rate as in 1975. A province may vary allowances paid in that province in accordance with the age of the child or the size of the family, or both, provided the monthly allowance for each child is not less than 60 per cent of the federal norm and the amount paid for all children in that province averages the amount of the federal norm.

As of December 31, 1975, Family Allowances were paid in respect of 7,819 children in the Yukon, representing 3,661 families, and 19,358 children in the Northwest Territories, representing 7,416 families.

The dollar expenditures for 1974-75 as well as the forecast expenditures for 1975-76 and 1976-77 are shown in the table below.

| | Family Allowances | | |
|-----|-------------------|---------------------|---------------------|
| | 1974-75 actual | 1975-76 forecast | 1976-77 forecast |
| YT | 1,899,000 | 2,104,000 | 2,175,000 |
| NWT | 4,663,000 | 5,199,000 | 5,274,000 |

Old Age Security

The Old Age Security Act provides for payment of a basic pension to everyone who has reached age 65 and who has fulfilled the residence requirements. The Act also provides for a Guaranteed Income Supplement (GIS) and a Spouse's Allowance. The Guaranteed Income Supplement may be added to the basic pension for pensioners who have no other income or only a limited amount. The Supplement is paid for a fiscal year, normally on the basis of a pensioner's income in the preceding calendar year. Income for supplement purposes is computed in accordance with the Income Tax Act. The maximum monthly supplement is reduced by one dollar for every full two dollars of monthly income over and above the basic pension.

The Spouse's Allowance was introduced in October, 1975. It provides a monthly allowance to the spouse of an Old Age Security pensioner if the spouse is between 60 and 65 years of age and meets the Old Age Security residence requirements. Entitlement is based on the combined income of the couple. The maximum monthly Spouse's Allowance is made up of an amount equivalent to the

basic Old Age Security pension and an amount equivalent to the maximum Guaranteed Income Supplement at the married rate.

Old Age Security benefits are increased quarterly - in January, April, July and October - if there has been an increase in the cost of living. In January, 1976 the basic Old Age Security pension increased to \$132.90. The maximum monthly supplement increased to \$93.22 for a single pensioner or a married pensioner whose spouse was not receiving the pension or a Spouse's Allowance and to \$82.78 each for a married couple who were both pensioners. The maximum Spouse's Allowance was \$215.68 (\$132.90 Old Age Security equivalent and \$82.78 Guaranteed Income Supplement equivalent).

In December 1975, in the Yukon, there were 558 Old Age Security pensioners, of whom 316 or 56.63 per cent were also receiving a supplement. In the Northwest Territories, there were 1,017 Old Age Security pensioners, of whom 793 or 77.97 per cent were also receiving a supplement.

Spouses of pensioners in receipt of a Spouse's Allowance numbered two in the Yukon and 11 in the Northwest Territories. Payments made during the year 1974-75 and the forecast of payments for 1975-76 and 1976-77, with an estimated breakdown between the three components of Old Age Security payments, are shown in the table below.

| | YT | | |
|--------------------|-------------------|---------------------|---------------------|
| | 1974-75 actual | 1975-76 forecast | 1976-77 forecast |
| O.A.S. | 792,000 | 755,000 | 819,000 |
| G.I.S. | 248,000 | 237,000 | 257,000 |
| Spouse's allowance | — | 23,000 | 24,000 |
| Total | 1,040,000 | 1,015,000 | 1,100,000 |
| NWT | | | |
| | 1974-75 actual | 1975-76 forecast | 1976-77 forecast |
| O.A.S. | 1,590,000 | 1,566,000 | 1,600,000 |
| G.I.S. | 499,000 | 492,000 | 502,000 |
| Spouse's allowance | — | 47,000 | 48,000 |
| Total | 2,089,000 | 2,105,000 | 2,150,000 |

Social Service Programs Branch

(Social Allowances and Services Branch prior to July 1, 1975)

The Canada Assistance Plan

The Canada Assistance Plan was enacted in 1966 to support integration, broadening and improvement of the public assistance programs of the provinces and territories and their municipalities, and to encourage the extension and development of welfare services. Under the plan, contributions amounting to 50 per cent of shareable costs are made toward provincial, territorial and municipal expenditures for public assistance and welfare services.

The Canada Assistance Plan has two primary objectives: to help provide adequate assistance to persons in need, and to encourage the development and extension of welfare services intended to prevent and remove the causes of poverty and dependence on public assistance. All provinces and territories have signed agreements under Part I (General Assistance and Welfare Services).

In addition to the cost sharing arrangements, the Canada Assistance Plan makes available to the provinces and territories, at their request, consultant services in areas such as income support, day care, child welfare, institutional care, community development and work activity. The National Day Care Information Centre which was created in 1972 provides information on all aspects of day care to any interested person.

Payments under the Canada Assistance Plan

| | 1974-75 actual | 1975-76 estimate | 1976-77 forecast |
|-----|-------------------|---------------------|---------------------|
| YT | \$ 740,000 | \$ 769,000 | \$2,200,000 |
| NWT | \$6,091,000* | \$4,719,000 | \$2,900,000 |

*Payments made during 1974-75 include claims for prior fiscal years.

Vocational Rehabilitation of Disabled Persons Program

The Social Service Programs Branch also administers the Vocational Rehabilitation of Disabled Persons (V.R.D.P.) Program. The Federal Government, through this program, shares the cost with the Yukon and Northwest Territories of providing vocational rehabilitation services to persons who, because of physical or mental impairment, cannot work. Such services may include counselling, assessment, training and job placement. There is also provision for a maintenance allowance on an individual needs basis while the disabled person is receiving these services.

During the year, the Branch also provided consultative services to the Territories in the development of their rehabilitation program which included programs for the rehabilitation of alcoholics when such programs were vocationally oriented. The utilization of the V.R.D.P. program is expected to increase in the coming year.

During the 1975-76 fiscal year, the Federal Government finalized many territorial requests for cost-sharing and reimbursed claims to the Yukon Territory incurred under V.R.D.P. for the period 1971 to 1975.

Payments under the Vocational Rehabilitation of Disabled Persons Program

| | 1974-75 actual | estimate 1975-76 | 1976-77 forecast |
|-----|-------------------|---------------------|---------------------|
| YT | \$137,074* | \$100,000 | \$115,000 |
| NWT | \$ 45,112 | \$ 50,000 | \$ 74,300 |

*Reimbursement for costs incurred from 1971 to 1975 inclusively.

Blind and Disabled Persons Allowances

Under the Blind Persons Act, 1951, and the Disabled Persons Act, 1954, the Federal Government shares in the cost to the Territories of providing assistance to blind and disabled persons, aged 18 and over, who meet certain income and residence requirements. However, the Yukon and Northwest Territories have

ceased to accept applications under these programs and have transferred recipients who can qualify on the basis of a needs test to their more comprehensive general assistance programs which are cost-shareable under the Canada Assistance Plan.

Federal Payments under the Blind Persons Allowances

| | 1974-75 actual | 1975-76 estimate | 1976-77 forecast |
|-----|-------------------|---------------------|---------------------|
| YT | \$ 225 | — | — |
| NWT | \$6367 | \$7000 | \$2000 |

Federal Payments under the Disabled Persons Allowances

| | 1974-75 actual | 1975-76 estimate | 1976-77 forecast |
|-----|-------------------|---------------------|---------------------|
| YT | \$ 825 | — | — |
| NWT | \$6120 | \$5000 | \$4000 |

Family Planning

The objective of the Federal Family Planning Program is to ensure the accessibility and availability of family planning services to all Canadians who want them. The program of the Family Planning Division, which was created in 1972, includes the purchase, publication and free distribution of literature on family planning and sex education; the provision of consultation of family planning matters to provincial, territorial and municipal departments of health, welfare and education, and to a broad range of non-governmental agencies; assistance in the training and education of health and welfare personnel; and the administration of a family planning grants program.

During 1975-76, family planning and sex education literature was sent to communities in the Yukon and Northwest Territories. A family planning pamphlet in western orthography was developed and printed by the Northwest Territories Family Planning Association with funds provided by the Family Planning Division.

Department of National Revenue (Revenue Canada)

Customs and Excise

Responsibilities

To administer the Customs and Excise laws and regulations, particularly those relating to effective Customs control over the movement of aircraft, vessels, goods and persons into and out of Canada.

Review of 1975-76

The local Port of Whitehorse under the purview of the Regional Collector, Vancouver, continues to administer Customs laws and regulations throughout the Yukon Territory. The Territory is serviced by all modern transportation media engaged in the importation and exportation of goods and the international movement of passengers. To accommodate this traffic, Customs outposts were maintained at Beaver Creek, Dawson, Little Gold (summer months only), Old Crow and Pleasant Camp. Customs formalities at Old Crow and Carcross are performed by the RCMP. Six locations were approved as Customs airports of entry and service was also provided for highway sufferance warehouses at Whitehorse and Dawson. Special arrangements were made to accommodate river traffic leaving and re-entering Canada on the Yukon-Porcupine River route.

The Port of Edmonton provides service as a reporting station for aircraft at Yellowknife on 72 hours notice and maintains an outpost for enforcement purposes at Inuvik. Service at Yellowknife is performed by officers from Edmonton on an "on call" basis. While at Inuvik, our officer is a full-time employee. The RCMP continue to provide service at Probusier, an outpost under the jurisdiction of the Port of Goose Bay, Newfoundland, which is administered by the Area Manager of St. John's. Service at this location, however, is restricted to the acceptance of inward passing and outward reports only.

During the year, exploration activities both of a commercial nature in the development of oil and mineral resources, and in the non-commercial activities such as geographical and mountaineering expeditions, continued with increased intensity. The oil exploration activities with the attendant increased cargo deliveries into northern areas have required closer surveillance by Customs personnel in this respect. Interest in this activity is dictated by the need to protect the revenue with respect to imported goods and to assess the adequacy of reporting and accounting procedures. Officers from the Port of Edmonton and Vancouver continue to make several journeys into the Territories to examine these aspects of the Department's interest.

There was a continuing increase in vessel cargo deliveries during the period covered by this report. The main shipping activity is the delivery of oil exploration supplies and petroleum products to various locations in the Territories, especially to the Arctic Archipelago. In all, the number of vessels engaged in various cargo movements has increased and Ministry of Transport icebreakers continue to be active in this area during the sealift operations. With respect to these movements, it must be noted that the co-operation of members of the RCMP and officials of the other government departments performing Customs enforcement functions for this department proved an invaluable asset.

During the fiscal year, an extensive review was made of Customs requirements and, as a result, to ensure Customs regulations are observed and the necessary service is provided, the Military Commanders at Cape Parry and Hall Beach were appointed Customs Enforcement Officers.

Locations for Customs service in the North, other than at the places described above, under the jurisdiction of the Ports of Whitehorse, Edmonton and Goose Bay are tabulated below under the headings of the government department or service whose employees perform the duties.

Royal Canadian Mounted Police

Baker Lake
Cambridge Bay
Clyde River
Coppermine
Eskimo Point
Lake Harbour
Pangnirtung
Pond Inlet
Resolute
Sachs Harbour
Spence Bay
Tuktoyaktuk

Department of National Defence

Cape Dyer
Cape Parry
Hall Beach

Department of Transport

Coral Harbour

Department of the Environment

Alert
Eureka
Isachsen
Mould Bay

Plans for 1976-77

Owing to increased acceleration of commercial activity in the Territories and the Arctic Archipelago, the adequacy of Customs control in this area will be subject to continuing examination and monitoring to determine the extent to which Customs surveillance and service is warranted and can be improved.

Long-term Plans

To maintain the present level of Customs service in this area and to increase service where it is indicated that continuous development of the North will require Customs surveillance and control.

Department of Public Works (DPW)

Responsibilities

The Department of Public Works, the principal construction arm of the federal government, undertakes a wide range of construction and maintenance work in the North, usually at the request of other government departments having responsibilities in the North. The Department provides architectural, engineering and construction services, and assists in planning, site investigation, economic feasibility studies design, as well as construction and management of buildings, public utilities, highways, harbours and wharves. It is also responsible for the acquisition and disposal of lands and properties, for the leasing of office and other space when Crown-owned space is not available, and for the upkeep of a great number of federal buildings in the North.

Public Works has a continuing responsibility for the development and maintenance of navigable waterways in the North. It is also responsible for the construction and upkeep of the northwest highway system, including the Alaska Highway and the Haines Road. The Department provides an engineering service to the Department of Indian and Northern Affairs for the location, design and construction of roads under the northern roads program, which includes two major links in the North – the Dempster and Mackenzie highways.

Accommodation, construction, marine and highway operations in the North are the responsibility of the Department's regional directors in the Pacific and Western regions.

Western Region – NWT

Review of 1975–76

Accommodation Operations

A nursing station in Cambridge Bay, an addition to the nursing station in Spence Bay and a kitchen renovation for the Inuvik Hospital were completed. DPW built a nursing station at Igloodik, modified the ventilation system of the General Hospital in Frobisher, changed the furnaces of the nursing stations at Broughton Island and Clyde River and installed an

emergency generator at the nursing station at Broughton Island. All the work listed above was completed for the Department of National Health and Welfare.

Work executed for the RCMP included the designing of major renovations to the cell block wing in Inuvik. A hangar heating system replacement in Inuvik is ready for tender call, and a detachment building is under construction in Fort Simpson.

A major addition to the Canadian Forces Base administration building in Inuvik has been completed. The federal housing program for 1975–76 in the Northwest Territories is nearing completion in Yellowknife, Inuvik, Fort Simpson, Hay River, and Fort Smith. A new housing program for 1976–77, in the Northwest Territories, specifically in Inuvik, Norman Wells, and Fort Simpson is being developed. Design types are: detached single family dwellings, duplexes, apartments and row houses.

Highways

Mackenzie Highway – The Department finalized the design for the total Mackenzie Highway from Mile 297 at Fort Simpson to Mile 931 south of Inuvik. The contract packages were prepared and held pending program approval. Construction activities were limited to the section between Fort Simpson at Mile 297 and Wrigley at Mile 440. Construction was active during 1975–76 on this section, primarily with a major \$9,000,000 contract for a 40-mile section from the Mackenzie River to the Willowlake River. Work started on this section in March 1975 and is expected to be complete in July 1976.

Dempster Highway – Work on construction of the subgrade from Arctic Red River to the junction of the Mackenzie Highway south of Inuvik was completed during 1975. Work continued on a \$15,000,000 contract between Fort McPherson and the Yukon boundary and is expected to be complete in early 1977. A contract was awarded in the fall of 1975 for gravel surfacing on the section between Fort McPherson and the Rengleg River. This work is expected to be complete in the fall of 1976. The completion of the Dempster Highway in the Northwest Territories will require the tendering of two

additional contracts for gravel surfacing. These are expected to be tendered in 1976 and 1977 and the highway is expected to be open for traffic between Inuvik and the Yukon boundary in 1978.

Inuvik Airport Road – The Department was responsible during 1975 for the reconstruction of approximately seven miles of highway between the Town of Inuvik and the Inuvik airport. The contract also included the construction of three miles of a by-pass of the Town of Inuvik connecting the Airport Road to the Town's industrial area. This contract valued at \$2,500,000 was completed in October 1975.

Inuvik-Tuktoyaktuk Road – Preliminary ground surveys were undertaken during 1975 to establish the location of this 80-mile section of highway which will connect Inuvik to the Arctic coast at Tuktoyaktuk. During the winter of 1975–76 Public Works geotechnical soil testing crews worked on this section in investigations for location of road construction materials. The design of this road is expected to be complete in late 1976.

Liard Highway – A minor amount of design work was carried out during the fiscal year 1975–76 on the Liard Highway. This highway, approximately 160 miles in length, will connect the Town of Fort Simpson in the Northwest Territories to the British Columbia boundary. The remaining portion of the road will be constructed by the Province of British Columbia and will make connection to Fort Nelson, BC.

Marine Works

Surveys, Investigations and Reports

Funding for the following projects was provided by the Department of Public Works

Mackenzie River Survey and Investigation – The field surveys on this project, which began in 1971, were completed in 1975. The office work continued on data compilation, hydraulic calculations, financial estimating, and plan production. A final report is expected by March 31, 1976 with a total estimated expenditure

of \$860,000. Data, plans, and low and high water parameters acquired from the Mackenzie River project were provided January 6, 1976 to a Task Force Group on the Intergovernmental Committee on the Mackenzie Basin.

Hay River Seaplane Landing Area – An area on the Hay River upstream from the "new" townsite was surveyed for a possible seaplane landing site.

Fort Good Hope – A survey was carried out on the Hare Indian River for a possible wharf site.

Tuktoyaktuk – Two surveys were carried out to investigate areas of ship groundings.

Liard and Nelson Rivers – A preliminary reconnaissance of these rivers in response to dredging requests was conducted with the Canadian Hydrographic Service and a report prepared.

Norman Wells – A sounding survey was carried out at the new wharf.

Spence Bay – A preliminary site investigation was carried out in this area.

Great Slave Lake – Public Works assisted in, and provided an amount of \$5,000 for the installation of a waverider on the lake off the mouth of the Hay River.

Sans Sault Rapids – A winter survey was conducted in the area of the Sans Sault Rapids known as the Lower Notch.

Departmental Plant Dredging Surveys – Dredging control surveys were carried out on Beaver Lake of the Mackenzie River and on the Hay River East and West Channels. Surveys in the Hay River locations also included pre- and after-dredging surveys.

Funding for the following project was provided by the Department of Indian Affairs and Northern Development

Ferry Crossings – Further surveys and reports were made in support of the Public Works Highway Division program at: Mackenzie and Arctic Red River crossings; Mackenzie crossings at river mileage 53; and Liard River crossing (cost estimate only).

Funding for the following projects was provided by the Government of the Northwest Territories

Liard River Ferry Crossing – A survey was carried out and report submitted on a request for dredging at the existing landings.

Providence Crossing – Before- and after-dredging surveys were conducted and a report submitted on proposed contract dredging cost and low water datum determination.

Tuktoyaktuk Phase II Shore Erosion Study – The final report on this study has been submitted.

Tuktoyaktuk Protection Work – A small survey was made in support of construction activities.

Funding was provided by Transport Canada for the following

Tuktoyaktuk Channel Dredging – Equipment was purchased and a survey and engineering investigation started in connection with a proposed major dredging program in the entrance channel to the Tuktoyaktuk Harbour. The project was cancelled before a significant amount of field work was carried out.

Construction

Norman Wells – The wharf construction was completed on August 15, 1975.

Wrigley – The floating wharf installation was completed in September 1975.

Fort Norman – Tenders were called for a contract to relocate the wharf access road, however the contract has not been awarded due to delays in obtaining the road right of way and approvals from the NWT Government.

Tuktoyaktuk (Funds from NWT Government) – Materials were delivered for emergency shore protection, fronting the settlement school. Due to weather conditions the contract was carried over to the 1976–77 season.

General Wharf Maintenance – Minor contracts were awarded for launching, maintaining and hauling out of the floating wharves at Fort Simpson, Fort Nelson, Fort Good Hope and Aklavik. Minor contracts were awarded and completed for repair of the wharves at Fort Providence, Fort Simpson, Hay River and Cambridge Bay.

Dredging and Miscellaneous Work

Departmental Dredging – The two departmental dredges, supported by one tug, worked in the Hay River West Channel, at Mile 13 of the Mackenzie River, and at the Providence Ferry Crossing. The two dredges removed a total of 102,000 cubic yards of material over the season.

Dredge Demolition – In April 1975, prior to spring break-up, a team from the Canadian Armed Forces Fleet Diving Unit at Esquimalt, BC undertook to eliminate the hazard created by the remains of Dredge 251 in the Sans Sault Rapids. With the use of explosives the remaining dredge spud well of heavy steel was cut away and the deck house and framing flattened.

Great Bear River – A contract for removal of boulders by blasting was awarded and the work completed in June 1975.

The following work is in progress:
for the Department of National Health and Welfare, DPW is building a nursing station at Pond Inlet;
for Environment Canada, a meteorological station at Clyde River and a residential complex for eight persons at Frobisher are being built;
for the RCMP, DPW is building seven houses at Frobisher and moving the RCMP quarters at Lake Harbour.

Pacific Region – YT

Buildings

Review of 1975–76

During 1975–76, the Department of Public Works was responsible for the design and construction of a number of projects for the Royal Canadian Mounted Police (RCMP), Department of Indian Affairs and Northern Development (DIAND), Yukon Territorial Government (YTG) and the Department of National Health and Welfare (NH&W).

Most of these projects are located in the territorial capital of Whitehorse. They include an RCMP central operations complex (with workshops and offices) scheduled for completion next year, and their new divisional headquarters building, now one-third complete. A central operations complex for DIAND was started, and renovations to their headquarters (Building 200) were completed during the summer of 1975. At the time of writing, construction of the new administration building for the YTG was nearly complete, with Public Works serving as prime consultant.

A new cottage hospital for National Health and Welfare in Watson Lake was completed early in 1976.

Plans for 1976–77

Work will continue on the new administration building, under Public Works supervision, with completion slated for the summer of 1976. An automotive maintenance addition to their central complex, sewer extensions in the Takhini area, and administrative offices in Kluane for DIAND are scheduled for completion in 1976. Construction of a border station at Beaver Creek is planned for Revenue (Canada Customs & Excise) in co-operation with Manpower and Immigration.

Long-term Plans

Construction of detachment headquarters in Beaver Creek and an aircraft hangar in Whitehorse are scheduled. RCMP divisional headquarters in Whitehorse will be completed.

Installation of an additional boiler at the Whitehorse hospital for NH&W is scheduled for 1977, with DIAND planning construction of a research laboratory at their complex in the territorial capital.

Highways

Review of 1975–76

Routine maintenance of the Alaska Highway in the Yukon was carried out by the Government of the Yukon Territory under agreement with Public Works. Three gravel crushing and stockpiling contracts were successfully completed for the production of surfacing aggregation as a continuation of the cyclic resurfacing program. Two applications of calcium chloride on the Alaska Highway, one in late spring and the other in mid-summer, were effective in minimizing dust hazards. Although the highway was closed in northern BC for the past two years due to extreme flooding, no unusual problems occurred in the Yukon. Kilometre-posts replaced the familiar mile-posts along the highway.

A contract was awarded for the reconstruction of the Alaska Highway from Mile 883 to Mile 904. The work under this contract progressed well and was 77 per cent complete at the time of winter shutdown. The diversion of the highway over the new Silver Creek culverts at Mile 1054 was completed by the YTG.

Work continued on the Northern Roads Program of Indian Affairs and Northern Development. Construction of the Dempster Highway continued with access being achieved to the Eagle River Bridge. Public Works provided engineering services. The access was completed too late in the season for on-site work to start on the construction of the Eagle River Bridge. Consequently the completion date for this structure will be delayed one year. Contracts for this bridge's steel fabrication were awarded by the Department of National Defence. The contractor will stockpile these items, along with other materials, for delivery in the coming year. Survey and design for the reconstruction of the Dempster Highway from Mile 0 to Mile 78 was completed.

The survey and design for the upgrading of the mine-access road from Mile 32 to Mile 48 was completed on the Carcross-Skagway road. A contract for the construction of the road from Mile 50 to Mile

66 was also completed. Tenders were called for the construction of the balance of the road through northwestern BC from Mile 66 to Mile 85.

Plans for 1976–77

Maintenance of the Alaska Highway and the Haines Road in BC will continue under agreements between Public Works and the Yukon Territorial Government.

Reconstruction and paving of the Alaska Highway from Mile 883 to Mile 904 will be completed and reconstruction from Mile 865 to Mile 883 will begin.

On the Dempster Highway, final cleaning and trimming under the contract for construction from Mile 178 to Mile 237 will be completed. Repairs to the highway, from Mile 235 to Mile 255, damaged during extreme high water in 1975, will be undertaken. On-site construction of the Eagle River Bridge, Mile 237, will be well advanced and construction north of Mile 237 will be started.

Construction of the next section of the Carcross-Skagway Road in north western BC, from Mile 66 to the Alaska border at Mile 85, will be under way. Completion is planned for August of 1978.

Long-term Plans

The present plans for the Alaska Highway call for the completion of the reconstruction and paving of the highway from Mile 865 to Mile 938. Any bridges not designed for HS 25 loading, or which have deteriorated through normal use, will be upgraded or replaced.

Property Administration

Review of 1975–76

The Property Administration Branch continued to provide accommodation to other federal government departments, crown agencies and the Yukon Territorial Government. This included approximately 200,000 square feet of crown-owned space, and 30,000 square feet of leased accommodation in the private sector.

Renovations to Building 200 for DIAND were completed in the spring of 1975. Building 201 was completely renovated for Public Works, including the addition of 3,000 square feet of mobile trailer space.

This Branch continued to administer the 352 Northern Pool Housing (NPH) units in Whitehorse and Fort Nelson, as well as the 57 unit single quarters complex in Whitehorse. Because of a change in their policy, the Yukon Housing Corporation reduced their NPH housing program, turning back 20 units to Property Administration Branch. The Treasury Board, which has conducted a review of the NPH program, agreed to a reduction in the number of units administered by Public Works. This reduction will be carried out gradually over a long-term period, utilizing various methods of disposal.

Plans for 1976-77

The relocation of Yukon Territorial government departments and agencies into the new Territorial Government Administration Building (being constructed under Public Works supervision) will take place in June 1976. This will result in a major re-allocation of space for client departments in the federal building in Whitehorse, and will lead to reductions in leased space in the private sector.

Long-term Plans

Property Administration Branch will continue to provide care and maintenance for the Northern Pool Housing units in Whitehorse and Fort Nelson. It is expected that changes in policy will see a reduction in housing and other property assets over a long-term period.

National Energy Board (NEB)

Responsibilities

Under the National Energy Board Act of 1959 and subsequent amendments, the Board has two principal roles: to regulate specific areas of the oil, gas and electrical industries in the public interest; and to advise the government on all matters concerned with the development and use of energy resources.

The Board acts as a regulatory body in issuing, with the approval of the Governor-in-Council, certificates of public convenience and necessity for the construction of interprovincial pipelines and international power lines as well as the issuing of licences for the export and the import of gas, the export of oil and of electrical power. In addition, the Board requires the implementation of adequate standards of construction and operation to ensure the safety of any facility that it has certificated. The Board also has the authority to regulate the tolls charged by gas and oil pipeline companies under its jurisdiction to ensure that such tolls are just and reasonable.

In addition, as a duty related to the advisory section of the act, the Board keeps under review and studies various aspects of exploration, production, recovery, processing, transportation, distribution, sale, purchase, exchange or disposal of oil, gas or electricity, and offers advice to the Minister and the Federal Government, either on its own initiative or by direction from the Minister.

The Board reviews and approves engineering drawings and specifications, environmental aspects and monitors the construction and testing of transportation systems before and during construction to ensure compliance to rules and regulations, safety standards and environmental guidelines before issuing a "leave-to-open" order.

As a result of a proclamation by the Governor in Council on May 10, 1970, under Section 87 of the Act, the provisions of the Act relating to exports and imports of gas were made applicable to oil. By regulations made immediately thereafter under Part VI of the Act, the effect of this extension was defined, with the result that the Board became responsible for the licensing of the importation into Canada of motor gasoline and motor gasoline blending components. Further amendments to the Part VI Regulations, during 1973 to 1975, have broadened the scope of the Board's responsibilities bringing under licence the export of crude oil and equivalent hydrocarbons, motor gasoline, middle distillates, propane, butanes, heavy fuel oils, partially processed oil and ethylene.

The Board has recently been assigned additional programs under the Petroleum Administration Act involving the oil export charge, the pricing of natural gas at the border and the attendant rebate procedure, and the monitoring of crude oil prices. The Board is currently conducting major public hearings on applications for pipeline certificates and for export licences in relation to the possible development of a major gas pipeline project from northern frontier gas reserves.

The Board also prepares oil and gas supply and demand forecasts, with particular study of the part that resources from the frontier regions of Canada might play and the transportation problems that might be encountered in moving energy from such sources of supply to market areas.

Review of 1975-76

A list of operations taken from the Board's Annual Report for 1975 includes the following (some of these operations will extend into future years)

Review of:

- the Board's responsibilities under the Petroleum Administration Act;
- the annual supply and demand for oil and gas;
- the oil and gas reserves;
- exploration and development activities in oil and gas;
- the oil and petroleum products demands;
- pipeline incidents;
- rates and tariffs for pipelines;

- natural gas export prices;
- natural gas production;
- domestic natural gas pricing;
- exports of electricity;
- interprovincial transfers of electricity;
- financial aspects of exports of oil, gas and electricity;
- the environmental aspects of oil, gas and electricity and of the organization of the National Energy Board.

The Conducting of:

- the Canadian oil supply and requirements hearing;
- the hearing for natural gas pipeline and oil pipeline extensions;
- the Mackenzie Valley Gas Pipeline Hearing;
- description of annual oil pipeline extensions and the preparation of oil pipeline regulations also took place.

National Film Board (NFB)

Responsibilities

the production of motion pictures, film strips, film strips, slide sets and still photographs about the Canadian North, its peoples and their activities, its industries, resources, and institutions; the distribution of these materials in Canada and abroad; and the distribution in the North of such material interpreting Canada and exploring issues of national interest; counsel to Federal Government Agencies concerning the application of audiovisual media and the planning, production and distribution of departmental films for information, instruction, training and cultural purposes.

Review of 1975-76

Staff
The full-time employee based in Yellowknife, operates for the Challenge for Change program. Film crews, trainers and distribution representatives travel North on assignment.

Film Production

The NFB produced for its own program: *Man Who Chooses the Bush*; *Man the Hunter* (Fishing) – *Peuplades de Chasseurs*; *Natsik Hunting*; *Arctic Workshop*; *Why, This Is For You*; *Our Land is Our Life*; *New Gold For Alaska*.

The following language versions were completed during the year:

Natsik Hunting (Inuktitut);
The Owl and the Lemming (Finnish, Danish);

The Owl and the Raven (Finnish, Danish, Japanese);

Sub-Igloo (Finnish, Russian);

New Gold For Old (French).

The NFB Multi Media Studio produced the following colour filmstrips:

High Arctic Heritage: Autumn Hunters – *Le Legs du Grand Nord: L'automne et la chasse*;

High Arctic Heritage: Winter Camp – *Le Legs du Grand Nord: Quartiers d'hiver*;

High Arctic Heritage: Spring Journey – *Le Legs du Grand Nord: La caravane du printemps*;

High Arctic Heritage: Summer Days – *Le Legs du Grand Nord: La vie en été*.

The Cape Dorset Workshop has been closed and the Frobisher Workshop has been turned into a production workshop at the service of Nunatsiakmiut in order to produce 15 minutes a week of native language programming, on the CBC. This program is being produced by people trained in the original Frobisher Workshop as well as new native film makers and is being telecast via ANIK throughout the North by the CBC Northern Service.

The Department of Indian Affairs and Northern Development co-produced *L'homme et le géant* and *Lumaq* with the NFB.

Distribution

Yukon – The Whitehorse Public Library, major film distributor in the Territory, is backed up by the Vancouver office of the NFB. This support has been in the order of 10-15 bookings monthly.

Northwest Territories and Northern Quebec – The NFB maintains an Outpost Film Library in Edmonton (English) and Montreal (French). Bookings from the Edmonton office average 60 per month, with Montreal considerably less because of major alterations to the library there. It must be noted that films from the Outpost Library are booked for three months, primarily to community groups.

Ottawa – The NFB's distribution office in Ottawa liaises directly with CBC Northern Service in order to bring NFB films to the North via this medium. This past year, eight local productions of the Frobisher/Cape Dorset NFB Workshop were telecast.

Labrador – Distribution in this region is co-ordinated through St. John's, Nfld. Working visits were made to the major centres of Goose Bay, Labrador City, Wabush and Churchill Falls, but the most optimistic development in the region this year was the establishment of television for the isolated coastal regions via satellite. It is expected that NFB material appropriate for the region can be made available to residents in this manner.

NFB Headquarters Montreal

NFB distribution sponsored a two-day seminar in June in Montreal on the dual subject of NFB involvement in the North and needs for NFB services in the North. In attendance were residents of the North as well as representatives of NFB involved in research, production and distribution in the North.

NFB also participated in a conference of adult educators held at Yellowknife from September 7 to 11. The conference was sponsored by the NWT Department of Education. The Board's involvement included a media workshop for 40 adult educators and department officials from all regions of the Northwest Territories.

Challenge for Change

In addition to establishing the presence of the program and identifying access to NFB materials and resources to communities, distribution of films, videotapes and video equipment has taken place. Several workshops were held with interest groups concerning the issues of housing, native land claims, the changing women's roles, the present and alternative use of energy, and the use of media in education and communication.

There was extensive involvement with the MacKenzie Valley Pipeline Inquiry, both with participation on an NFB film and videotaping community hearings for use by other communities in preparing for their own hearings and the visit of Mr. Justice T. R. Berger.

In the Eastern Arctic, a project was sponsored to consult the communities in the Baffin Region as to whether or not they needed preparation in the form of media orientation before they received television and radio programming from southern Canada via the ANIK Satellite.

Consensus in the communities emphasized the need for training of local people in producing their own programming in their own language.

Plans for 1976-77

The NFB plans for its own program are as follows:

Fort Good Hope;

Saukai;

Bowhead Whale (Version);

Images Stone;

Arctic Bay-Nordev;

Development in N/W B.C.;

Lapland Film Project (two films).

A training workshop in Super 8mm for a native communications group will be conducted at Fish Lake.

The NFB Multi Media Studio hopes to revise the two filmstrips *The History of Government in the Northwest Territories* and *The Structure of Government in the Northwest Territories* in co-operation with the Department of Indian Affairs and Northern Development.

The NFB will complete films commissioned by the following departments:
completion of *Strathcona Mine Site* –
Department of Indian Affairs and Northern Development;
completion of *The Native Women* –
Department of the Secretary of State;
continuation of the Frobisher film workshops to train film makers –
Department of Indian Affairs and Northern Development.

National Museums of Canada (NMC)

National Museum of Man (NMM)

Canadian Ethnology Service

Responsibilities

To document the cultural heritage of the native peoples of Canada, including research, material collection, and analysis and dissemination of information on the social, linguistic and material culture of the Indians and Inuit of the Yukon Territory and the Northwest Territories.

Review of 1975-76

Inuit Research

Staff research included studies of the Inuit (Eskimo) language, Inuktitut, at Rankin Inlet and Chesterfield Inlet, filming and field research of caribou hunting, and a computerized study of the naval architecture of kayaks.

Additional research was supported through the Urgent Ethnology Program which included contracts for: a study of Inuit ethnopsychology and emotional expression in Cumberland Sound, NWT; a study of Netsilik Inuit music from the communities of Gjoa Haven, Spence Bay and Pelly Bay; and the filming of modern Inuit subsistence techniques in the vicinity of Coral Harbour, NWT.

Athapaskan Research

Staff research was directed toward continuation and land use, territoriality and spatial organization studies among the north-western Athapaskans, and a new study of sign and motion language developed for use by deaf mutes and traders was initiated. In addition, the following studies were conducted by contracts supported by the Urgent Ethnology Program: a study of phonology and linguistic variation among the Chilcotin and Carrier Athapaskans of British Columbia; collection of biographies of Athapaskan women between the ages of 40 and 85 living in villages in the Yukon Territory; ethnographic field studies among the Tahltan Athapaskans in the vicinity of Telegraph Creek and Watson Lake, BC;

a cultural-ecological field investigation of the Caribou-Eater Chipewyan of the Wollaston Lake region of northern Saskatchewan; documentation and analysis of the effects of recent technological changes upon the traditional economic cycle of the Chipewyan at English River; initiation of an ethnographic study of the Athapaskans of Fort Ware with an emphasis on technology, ecology and social organization; implementation of an ethnological field study of aboriginal and contemporary patterns of Indian burning techniques in northern British Columbia, Alberta and the southern Yukon; continuation of an age-graded comparative linguistic study and completion of a bilingual dictionary of the Hare language as it is spoken in Fort Good Hope, NWT; investigation of the material culture, social organization and magico-religious belief of the Chipewyan of Black Lake, Saskatchewan; and the conduction of a field study on the cultural ecology of the Chilcotin Athapaskans with special emphasis on traditional patterns of subsistence, ethnobotany, ethnozoology, land use and territoriality.

Plans for 1976-77

Inuit Research

Staff research will continue work on the long-term circumpolar kayak study. Seasonal subsistence activities will be filmed in the Rankin Inlet area.

The following projects are proposed to be undertaken by outside Urgent Ethnology contract personnel:

examination of the nature and distribution of commercial whaling operations in the western Canadian Arctic to determine the impact of these operations on the size, distribution, health, economy and material culture of Inuit populations; reconstruction of the size and structure of the major winter groupings which formed the regional population aggregates of the Clyde River area of Davis Strait, NWT in early contact times, to determine the patterns of resource sharing, residence, leadership and decision making that operated within

these groups; and the undertaking of a study on the contemporary arts of the Canadian Inuit by examining Inuit aesthetic concepts, their development and transmission.

Athapaskan Research

Staff research will continue to be focused on land use, territoriality and spatial organization of the northwestern Athapaskans. Video tape recordings of sign and motion languages will continue.

The following project is proposed to be undertaken by outside Urgent Ethnology contract personnel:

the conduction of an initial linguistic survey of the interrelationships among the Tagish, Tahltan and Kaska Athapaskans of the Yukon Territory and North British Columbia.

Long-term Plans

To conduct field and archival research on the cultures of northern indigenous peoples. Staff members direct the work, but much of it is done under contract by outside personnel. One aim is to involve greater numbers of Indian and Inuit people in the documentation of their own cultural heritage so they can then use the material to teach their own cultural history.

Archaeological Survey of Canada

Responsibilities

To undertake research and rescue operations, on the prehistory of Canada's native people.

Review of 1975-76

Arctic Archaeological Research

Two parties independently surveyed the upper portions of four major drainages in 1976. While the west party surveyed a portion of the Snowdrift River and most of Nonacho and Hjalmar Lakes and all of Noman and Gray Lakes (Taltson River), the east party surveyed Firedrake Lake (Dubawnt River). In late July, the west party joined the east party in the barrens, completely surveying Rennie, Jarvis and Damant Lakes and the outflow of Vermette Lake and the north shore of Knowles Lake (upper Elk River).

The 1975 season comprised one phase of an ongoing project begun in 1970 – that of the study of the prehistoric association of ancient cultures with the past Beverly caribou herd. Cultural distribution is traceable from the historic Chipewyan and White trapping sites, through the Chipewyan-Taltheilei traditions, the Arctic Small Tool and Shield Archaic traditions, to the 6000 B.C. Northern Plano tradition.

Yukon Territory

Field work focused primarily on the first of a five-year study of Pleistocene paleo-environments and early man in eastern Beringia (that portion of interior Yukon which remained free of glacial ice). This multidisciplinary study, entitled the Yukon Refugium Project, is co-sponsored by the National Museums of Canada and the Geological Survey of Canada. Field work has thus far concentrated on several dozen Pleistocene exposures in the vicinity of the major glacial lake basins of northern Yukon as well as a few sections in the central region of the Territory. Numerous large samples of sediment, organic material, and fossil vertebrate remains afforded more than ample laboratory work for all members of the project through the winter. Additional activity included the completion of excavations at the Gladstone site in southwestern Yukon, testimony before the Whitehorse hearings of the Berger Inquiry, and an inspection trip in the area of the Aishihik Hydro-electric Power Project.

Northwest Territories

Resources Archaeology – Contract Supported Projects

Dempster and Mackenzie Highway Survey – On-the-ground reconnaissance, with helicopter support, was carried out on several sections of highway where clearing and construction were imminent and a potential threat to archaeological

sites. This included the Mackenzie Highway from River between Two Mountains and Fort Norman; Mackenzie Highway between Inuvik and Tuktoyaktuk; and Dempster Highway between the Peel River and the Yukon Border. The project was funded by Department of Public Works. Work on these sections is complete.

Thule Archaeology Conservation Project – Three field parties with Inuit guides carried out reconnaissance in northern and eastern Baffin Island and in the Spence Bay area to record Thule sites threatened by whale bone mining in support of the carving industry. The project was sponsored jointly by National Museum of Man and Department of Indian Affairs and Northern Development, with the co-operation of Inuit Tapirisat. This was the first season of a program designed to extend over a period of several years.

Salvage Excavations at Kingnait Fjord – Salvage excavations were carried out at some relatively recent burial sites in Kingnait Fjord, where graves have been subject to considerable looting by relic collectors. Financial support was provided by National Museum of Man and the Arctic Institute of North America, with the co-operation of the Inuit Council in Pangnirtung. Additional work at the site is required.

Strathcona Sound Archaeological Survey – A brief reconnaissance was carried out at Strathcona Sound, in the area of operations of Mineral Resources International, to ensure the safety of archaeological sites. The survey revealed no evidence of prehistoric occupation in the threatened area. Funds were provided by the Department of Indian Affairs and Northern Development. No additional work is required.

Salvage Archaeology at Button Point – A major site on north Baffin Island is being rapidly eroded by wave action, and this year, another season of archaeological rescue work was carried out, funded by National Museum of Man. Further efforts are required to obtain as much information as possible before the site is completely destroyed.

Plans for 1976–77

A second season of reconnaissance and selected excavation at Thule sites threatened by whale bone mining is now in the planning stage.

Financial support is being sought for continued work at Button Point and Kingnait Fjord on Baffin Island.

A program of archaeological excavation and survey will be conducted at Aishihik Lake, Yukon Territory, where there are plans for raising the water level of the lake thus threatening lake shore sites. Work will concentrate at Old Aishihik village. Support is being sought from the Northern Canada Power Commission.

Long-term Plans

Long-term plans were devised to delineate the history and nature of indigenous occupation of the northern interior District of Mackenzie over the last 12,000 years, or how long man has occupied any part of the area, including evidence for any changes in the population (from or to Palaeo-Indian, Indian, and Inuit). An understanding of the palaeo-climate is critical to this research. Further surveys are planned for a large area of interior Yukon Territory as a part of the on-going Bering Yukon Refugium Project (BYRP). BYRP is an interdisciplinary study of palaeo-environments in the unglaciated areas of the Yukon during the Upper Pleistocene. This long-term project will include studies of the sedimentology, geomorphology, palynology, palaeo-entomology, palaeontology, and archaeology of the Beringian Refugium. Archaeological evidence thus far consists of fossilized bone artifacts from a number of localities in the region, but undisturbed deposits of archaeological significance have yet to be located and excavated.

National Museum of Natural Sciences (NMNS)

Vertebrate Zoology Division

Vertebrate Ethology Section

Responsibilities

The Zoology Division of the National Museum of Natural Sciences is one of the primary contributors to the knowledge of animal species in Canada. Comprehensive faunal surveys are conducted and promoted, and the museum maintains important collections of fauna and flora. Its scientific collections of Arctic material are among the best in the world. This division co-operates with other government agencies and scientists of other countries interested in problems of the North.

The NMNS High Arctic Research Station was established on Bathurst Island, N.W.T., in 1968 in collaboration with the Polar Continental Shelf Project. The vertebrate ethology section is undertaking detailed, long-term studies at the station to investigate the relationships between species of Arctic animals and the behavioural adaptations that enable them to survive in High Arctic environments. This small field station permits some university students to undertake research and promotes public interest in conservation in the High Arctic.

Review of 1975-76

The research station was in operation from May 8 to September 26, 1975. The following projects were conducted:

Breeding Bird Census and Banding Program – Information on nesting, egg-laying, hatching, incubation and fledging was recorded at 181 nests of 17 species. Long-tailed Jaeger, Snow Bunting and Snow Goose were the most successful species this year. Ten individuals banded in previous years were re-captured and 224 individuals of 15 species were banded and colour-marked.

Life History and Ecology of Varying Lemming – Collection of data on population fluctuations in relation to weather conditions and burrow availability continued. Population estimates are based on trapping results. Specimens collected provide reproductive data used in determining breeding structure of the population.

Meteorology and Microclimatology – Standard meteorological observations were made three times daily and three-hour aviation weather reports provided. Continuous records of sunshine, radiation, humidity, temperature and wind were also maintained and detailed microclimatological measurements were initiated as part of a preliminary study on the physiology of mosses.

Behaviour and Ecology of Muskoxen – Ethological observations were continued in Polar Bear Pass with emphasis on courtship and the behaviour of subadult animals. Despite the population decline of 1973-74, breeding did take place and several calves were observed. In conjunction with G. Parker, CWS, studies were made also at Mokka Fjord, Axel Heiberg Island, from mid-March to mid-May and more information on calving and maternal behaviour was obtained.

Behaviour and Ecology of the Ivory Gull – The study of this rare and possibly endangered species was continued on Seymour Island, the only known nesting site in the Canadian Arctic. Detailed information was collected on arrival in the nesting area, progression of reproductive cycle, colony site selection, breeding chronology, formation of subcolonies, anti-predator behaviour, development of the young, vocalizations, and effects of the weather. A banding program was established and will be continued next year.

New Projects in 1975

Behaviour of Peary Caribou and Arctic Fox – Information was collected on numbers and movements of caribou in the study area, activity cycles, and all aspects of behaviour. However, due to the recent population decline, numbers were very low and observations made on only 13 days during the summer. Because of the caribou situation, behavioural observations were expanded to include a study of two adult Arctic Foxes and 13 pups at an active den site near the station.

Soil Lichen Ecology – This preliminary study involved collection and inventory of lichen species, establishment of study plots and three transect lines for sampling and detailed analysis and examination of particular habitats in relation to hyphal penetration and substrates.

Breeding Biology of the Red-Throated Loon – General observations at 21 nests and detailed recording of behaviour patterns at two nests provided information on courtship and other displays, vocalizations, nesting, incubation, hatching, brooding and feeding activities. Following predation of most nests, territory selection behaviour was observed.

Vegetation Mapping, Plant Community Studies and Bird Nesting Habitat – Preliminary mapping of vegetation communities was based on investigation of species composition, cover and other factors and a classification scheme for community types was developed. Detailed examination of the relationships between plant communities and environmental factors was carried out along a 2100 m. transect through the primary study area. Nesting habitat studies were carried out for 111 nests of 12 species.

Plans for 1976-77

Each of the established bird and mammal projects, plus the classification and mapping of plant communities in Polar Bear Pass will be continued. Studies of the reproductive biology of muskoxen will be initiated in conjunction with the Government of the Northwest Territories and Inuit hunters. The behavioural study of Arctic Hare will be re-established in March 1977.

Long-term Plans

The current research at Bathurst Island will continue at least until September 1978. In order to obtain better information on interspecific relationships, population fluctuations, and effects of weather and climate in relation to behaviour, social organization, population sizes and breeding success, projects must be continuous and of long duration.

Some of the projects are continuations of those established in 1968. Others become temporarily inactive when the species under study is present in very small numbers, does not breed, or is absent. Continuous records of phenological events during the field season are maintained and the station weather data are submitted to the Atmospheric Environment Services.

The continuing studies emphasize Arctic animals in their undisturbed natural environment. The research area is included in the ecological site proposals submitted to DIAND in September 1975.

Mineral Sciences Division

Responsibilities

To collect representative mineral specimens from previously recorded occurrences in southern Baffin Island for the display and reference series of the National Mineral Collection. To assess the potential of the area for future mineralogical studies and collecting programs.

Review of 1975-76

Mineral specimens were collected July 1-22, 1975 at 29 localities in the Lake Harbour, Cape Dorset, Andrew Gordon Bay, Aberdeen Bay, McKellar Bay, Lonebutte Bay, Schooner Bay, Amadjuak Bay, Korok Inlet and Clearwater Fjord areas of southern Baffin Island.

Plans for 1976-77

No field work is planned, but the identification of material collected during 1975-76 field season will be completed.

Long-term Plans

To continue field work in the same area until representative collections are acquired and to extend the collecting area to northern Baffin Island.

Palaeontology Division

Quaternary Zoology

Responsibilities

To collect Pleistocene vertebrate material from the Yukon and to curate and describe it in an attempt to reconstruct the vertebrate history of the region during the ice age.

Review of 1975-76

During July and August a three-man field party collected many Pleistocene vertebrate fossils from the Old Crow Basin, the Dawson City area and the Sixtymile River area of the northern Yukon Territory. During this period co-operative field work (Yukon Refugium Project) was carried out in the Old Crow Basin - Porcupine River region with a Pleistocene geologist and a Pleistocene palaeoecologist (Geological Survey of Canada), an archaeologist (National Museums of Man) and a palaeobotanist (University of Alberta). A National Museum of Natural Sciences research base was established at Old Crow to support future palaeo-environmental research in the region.

Plans for 1976-77

Plans for this period involve collection of Pleistocene vertebrate fossils in Old Crow and Dawson City areas from August 1-31.

Long-term Plans

To continue field work on Pleistocene vertebrates in the Yukon Territory, specifically in the vicinities of Dawson City and the Old Crow Basin, until representative collections have been established.

Ornithology Section

Responsibilities

The Ornithology Section of the Museum of Natural Sciences is one of the primary contributors to avian knowledge in Canada. Comprehensive bird surveys are conducted and promoted, and the Museum maintains important collection of ornithological materials which are among the best in the world. This Section co-operates with other government agencies and scientists interested in ornithological problems.

Review of 1975-76

Preliminary Survey of Birds of Coats Island

Data were recorded on the birds of the Cairn Cove area of Coats Island from July 20-27, 1975. Forty-seven species were recorded, of which 23 were ascertained to breed. Some of the breeding records extend the breeding range of a few species.

An Area of Sympatry for Thayer's Gull and Kumlein's Gull

Located in the summer of 1975 on the central eastern coast of Baffin Island. Preliminary studies were made.

Plans for 1976-77

A three-month study will be undertaken in an area of sympatry for Thayer's Gull and Kumlein's Gull on eastern Baffin Island with emphasis on the taxonomic affinities and ethology of these perplexing populations.

Long-term Plans

The Ornithology Section has a sustained interest in the birds of the North and will continue its activity there on a more regular basis as additional resources become available.

Botany Division

Phycology Section

Review of 1975-76

During August and September of 1975, the Curator, Dr. R. K. S. Lee, continued field activities for a long-term project titled *Survey of the Benthic Marine Algae of the Canadian Arctic*. Collecting specimens and physical data was done by scuba divers, utilizing specialized cold-water equipment and techniques. Using a helicopter for transportation, 29 collecting sites were established from the Royal Geographical Society Islands to Resolute, and from Jones Sound to Byam Martin Channel.

Plans for 1976-77

The survey will be concentrated in waters of the Queen Elizabeth Islands in the general area of Eureka, Alert and Etah.

Long-term Plans

Much will depend on what can be achieved during the first attempt to survey the remote and generally ice-bound waters of the Queen Elizabeth Islands. Collecting of data and specimens from this High Arctic region would lead to a near completion of the field aspect of the project.

Vascular Plant Section

Review of 1975-76

Dr. Erich Haber, assistant curator, made collections of vascular plants, lichens and mosses from 12 sites ranging across the central area of the Arctic Archipelago from eastern Melville Island to southwestern Ellesmere Island. The field collections were made in conjunction with a continuing museum project by Dr. R. K. S. Lee dealing with a survey of the Benthic Marine Algae in the Canadian Arctic. Occasional field excursions to the Arctic to continue documentation of the flora will be undertaken as opportunities for travel arise.

During the period July 21-27, 1975, J. M. Gillett, Curator of the Vascular Plant Section, joined one of the museum's ornithologist, Henri Ouellet, on a short visit to Coats Island, Hudson Bay, NWT. This trip was not part of a planned program but was simply to take advantage of an opportunity to botanize on a relatively little-known island. Transportation by means of an aircraft chartered by a Canadian Broadcasting Corporation unit engaged in work on the Island.

The area visited was in the vicinity of Cairn Cove at 62° 49' N, 81° 56' W (Map 45J, UTM Ref. 17V/MV 452/6967). This was the site of some Sadlermiut ruins. Some 20 species of mosses, one hepatic, 14 lichens and 116 species of vascular plants were collected. The species of lichens, mosses, hepatic and 36 species of higher plants constituted additions to the known flora of the Island. A paper on the results has been submitted for publication in the Canadian Field-Naturalist.

Plans for 1976-77

No definite program or plans have been laid at this time, but should an opportunity arise to co-operate with other agencies in work in the North, advantage will be taken of it.

National Research Council (NRC)

Responsibilities

Investigations into various phases of pure and applied sciences in northern Canada.

Herzberg Institute of Astrophysics

Review of 1975-76

Continuous monitoring of cosmic ray intensities was carried out at three stations in northern Canada (Alert, Inuvik and Goose Bay). This work is part of an international program based on a worldwide network of cosmic ray monitoring stations. The data is sent, on a regular basis, to the World Data Centre and it is distributed to interested scientists from there.

During 1975, experiments were flown on rockets from Cape Parry and from Fort Churchill, Man. The instrumentation included charged particle detectors, plasma probes and photometers to study a number of magnetospheric problems related to the dayside cleft and the nightside aurora.

Ground-based spectrometric and photometric observations of auroral and airglow emissions in the ultraviolet, visible and infrared regions were made from Fort Churchill. The data are being correlated with other data gathered by rockets launched from Churchill and from spacecraft.

Auroral radar equipments were operated continuously at Poste-de-la-Baleine (Great Whale River), PQ and at Churchill and Thompson, Man.

Auroral all-sky cameras were in operation at Poste-de-la-Baleine, PQ, Moosonee, Ont. and Churchill.

Plans for 1976-77

It is planned to continue the 1975-76 programs at about the same level in 1976-77. Geophysical observations for the International Magnetospheric Study (IMS) will commence in 1976.

Charged particle detectors, plasma probes and photometers will be flown on rockets to be launched from Fort Churchill.

Instruments for the observation of aurora and airglow will continue in use at Poste-de-la-Baleine, Churchill, and Moosonee on a routine basis. Auroral and airglow observations in the ultraviolet, visible, and infrared regions of the spectrum will be made during selected periods of the winter of 1976-77 from Churchill, Wabowden, Man. and Broadview, Sask.

The network of auroral radars will continue in operation at Churchill, Thompson, and Poste-de-la-Baleine.

National Aeronautical Establishment

Review of 1975-76

At the request of the Department of Energy, Mines and Resources, the North Star aeromagnetics research aircraft operated by the Flight Research Laboratory of the National Aeronautical Establishment carried out an extensive Arctic geomagnetic reconnaissance in April 1975.

This reconnaissance included an aeromagnetic survey of the Continental Shelf north of Ellesmere Island and Nansen Sound, a survey of the eastern part of the Alpha Ridge and one flight passing over the North Pole.

Plans for 1976-77

The North Star aeromagnetics research aircraft operated by the Flight Research Laboratory of the National Aeronautical Establishment will carry out another Arctic geomagnetic reconnaissance in April 1976. This reconnaissance will provide survey data, at 20 nm spacing, of Boothia Bay and Admiralty Inlet.

This is likely to be the last aeromagnetic survey operation for the North Star, which is scheduled for retirement shortly thereafter.

Space Research Facilities Branch

Review of 1975-76

The Council, through its Space Research Facilities Branch continued to operate the Churchill Research Range and the Great Whale Geophysical Station during 1975. Programs included the launching of scientific sounding rockets and balloons to investigate geophysical phenomena in the upper atmosphere on behalf of scientists from Canada, the United States and other countries. Associated ground-based experiments were also carried out by scientists from various universities participating in these programs.

The temporary launch site at Cape Parry was modified during the summer months in preparation for further studies of the polar dayside cleft which occurs in the northern hemisphere. The Branch provided these launch facilities and some personnel support for the University of California, which launched two Black Brant IVA rockets in late November 1975. The rocket borne experiments were complemented by ground-based instrumentation at Resolute and air-based instrumentation from two USA NC135 aircraft. This program was directed toward studies of the polar cleft by barium plasma injection at about 500 km.

A balloon launch program of five flights was flown from Great Whale by the University of Calgary with the Branch providing some operational and logistic support. The purpose of this program was the study of the precipitation of electrons over large regions on a time correlated basis in collaboration with the Max Planck Institute für Aeronomie, Lindau/Harz, Federal Republic of West Germany.

Plans for 1976-77

Operation of the Churchill Research Range will be continued for the launching of scientific sounding rockets and balloons in conjunction with ground-based instrumentation to investigate geophysical phenomena in the earth's atmosphere and in space on behalf of scientists from Canada, the United States and other countries.

NRC does not have a rocket program in the NWT for 1976-77. Work in this area will be mainly confined to some on-site maintenance at Cape Parry and Resolute. The Great Whale Geophysical Station will continue the work of auroral photography and photometry and the measurement of a variety of radio frequencies for Canadian and US agencies. This station and Churchill will be important in Canada's contribution to the International Magnetospheric Study program planned for 1976-78.

Division of Building Research

Review of 1975-76

Initial instrumentation was installed in March, 1976 at a test site on the Mackenzie Highway near Wrigley, NWT (selected following a reconnaissance survey in 1975) to evaluate the performance of an embankment constructed on permafrost. Observations on several insulated test sections installed in 1972, on the Mackenzie Highway near Inuvik, NWT were continued. Periodic measurements of ground temperatures were continued at the Eagle River bridge site on the Dempster Highway, YT.

The Division's field station at Thompson, Man. continued to provide support for permafrost engineering and terrain studies in northern Manitoba and the Keewatin District, NWT. Measurements of frost heave forces and heat conduction of steel piles installed at Thompson were continued. Regular observations on micro-climate, surface energy exchange and ground temperatures were continued at several experimental sites at Thompson.

Permafrost temperatures were measured regularly at several locations in northern Manitoba and Keewatin District in the vicinity of the boundary between the discontinuous and continuous permafrost zones and on the proposed Polar Gas pipeline route. Monthly ground temperature observations on alpine permafrost in the Western Cordillera were made 10 miles southwest of Calgary on Pieau Mountain at an elevation of 8,300 feet above sea level to assess the influence of elevation and other environmental factors. Ground temperature

observations were made regularly at microwave relay station sites in southern British Columbia.

Model studies of foundations in frozen ground were initiated in the Division's cold rooms. Field investigations using penetrometer and/or pressuremeter devices were conducted in frozen ground at Thompson. Laboratory studies of the mechanical properties and deformation behaviour of frozen soils were continued.

Laboratory and field studies to determine the structure, mechanical properties and rheological behaviour of fresh water ice were continued. Emphasis was also given to the development of experimental techniques for investigating the microstructure of sea ice. Studies of ice conditions and the forces exerted by ice on the wharf at Strathcona Sound, Baffin Island, were conducted for the Department of Public Works.

Advice and assistance on northern building and geotechnical problems was provided to a number of industry firms and government departments and agencies.

Plans for 1976-77

The micro-climate and terrain studies of permafrost at the Thompson, Man., station will be terminated but *in situ* measurement of the thermal properties of frozen soils will be initiated at selected test sites. The program to measure frost heave forces on foundations at Thompson will be expanded and instrumentation will be installed to assess the effects of paved and gravel surfaces on the ground thermal regime.

The permafrost ground temperature measurements in northern Manitoba, Keewatin District and the Western Cordillera will be continued and additional cables will be installed along the proposed Polar Gas pipeline route and in the mountains.

The study of insulated and uninsulated embankments constructed on permafrost on the Mackenzie Highway near Inuvik and Wrigley respectively, will be continued. Detailed studies of foundation performance will be undertaken during construction of the Eagle River bridge on the Dempster Highway.

Field and laboratory studies of the mechanical properties and deformation behaviour of frozen ground (including model studies of foundations) will be continued. Work on the properties of frozen and thawed soils will also be undertaken.

Work on the structure and mechanical properties of fresh water and sea ice will be continued. Physical modelling studies of the interactions of floating ice covers and fixed structures will be initiated.

Long-term Plans

Several Divisions of the National Research Council have a continuing interest in the North.

The Herzberg Institute of Astrophysics is involved in studies of space radiation, aurora, airglow and other upper atmosphere phenomena which can be studied in northern Canada. These studies employ a variety of ground-based and rocket-borne techniques.

The Division of Building Research conducts studies of permafrost, snow and ice and northern building problems.

The Space Research Facilities Branch (SRFB) provides services to Canadian Scientists engaged in upper atmosphere and space research using sounding rockets, ground-based instrumentation and balloons. The SRFB operates the Churchill Research Range, a Geophysical Station at Great Whale and temporary sounding rocket facilities at Resolute and Cape Parry and co-ordinates scientific programs conducted at these and other locations in Canada.

The National Aeronautical Establishment has participated in northern research for many years, mainly through the aeromagnetic surveys carried out by the North Star research aircraft operated by the Flight Research Laboratory. The Department of Energy, Mines and Resources, which requests these surveys, has a long-term interest in gathering more aeromagnetic data in the North.

The North Star aircraft is scheduled for retirement in 1976, but it is anticipated that similar work will be carried on several years hence when its replacement, a Convair 580, is in operation.

Other Divisions of the National Research Council become involved periodically with northern work on a short-term basis.

Northern Canada Power Commission (NCPC)

Responsibilities

Responsibilities of the NCPC are: to provide public utilities in the Yukon and Northwest Territories as authorized by the Governor-In-Council; and to operate plants from consumer revenue on a self-sustaining basis including repayment of Capital Expenditures.

Review of 1975-76

Gross generation of electrical energy in the Territories increased to 688,000,000 KWH or 11 per cent more than in 1974-75. Of this 76 per cent was provided by hydro from three plants in the Yukon and two plants in the Northwest Territories. The balance was provided by over 225 diesel generator sets. The Commission at year end was operating a total of 51 systems serving a total of 58 communities throughout the Canadian North.

To meet this year's load growth an additional 28,000 KW of diesel electric capacity and 30,000 KW of hydro capacity were added to the system. The diesel units ranged in size from 2,500 KW at Yellowknife, Inuvik, Frobisher and Whitehorse to the smaller units of 200 KW at Snowdrift and Fort Liard. The two hydro units of 15,500 KW each were commissioned at Aishihik in the Yukon Territory in June 1975. Powerhouses to accommodate the diesel units were added or extended at Coral Harbour, Rae/Edzo, Inuvik, Pond Inlet, Gjoa Haven, Pelly Bay, Broughton Island, Holman Island, Spence Bay, Wrigley and Fort Liard. Two 34.5 transmission lines were completed and energized in the Yukon Territory. These lines are now providing hydro power to the communities of Haines Junction and Ross River.

The high temperature water central heating system in Frobisher was modernized and upgraded with the installation of a 30 million BTU/hr. boiler. Extensions and improvements to distribution systems and employees' accommodation were carried out at a number of plant locations.

Plans for 1976-77

An application is presently under consideration by the Yukon Water Board covering a proposed fourth hydro unit at the Whitehorse Hydro Plant, rated at 20 MW capacity. In the Northwest Territories, construction of a two unit, nine MW hydro plant on the Snare River is scheduled for completion in the summer of 1976. An additional three MW hydro plant on the Snare River is scheduled for start of construction in the winter of 1976 for completion in late 1977, subject to approval of the NWT Water Board.

An additional four MW of hydro capacity was also under construction on the Taltson River during 1975 and is scheduled for commissioning in the spring of 1976.

Long-term Plans

A hydro plant of 18 MW on the Taltson River at Elsie Falls is presently proposed for completion in 1979-80. This plant would augment the existing hydro capacity for the Fort Smith-Pine Point area.

Five potential hydro sites in the Yukon are under active investigation, to provide for the anticipated electrical growth on the Whitehorse/Aishihik System through the early 1980's.

Negotiations are presently underway with Alberta Power Ltd. towards the possible acquisition of their facilities in the Yukon and Northwest Territories.

Northern Transportation Company Limited (NTCL)

Responsibilities

Northern Transportation Company Limited has operated throughout the Mackenzie River system and the Western Arctic coast for over 40 years. The company's marine operations have been the principal transportation lifeline serving general community freight needs and providing logistics support for oil, gas and mineral exploration and development. Since 1944, NTCL has transported in excess of five million tons of freight over a 5,000 mile system. The Company operates a fleet of three ocean-going ships, 29 diesel tugs and 167 all-steel, dual-purpose barges with capacities up to 2,250 tons, providing an aggregate gross tonnage in excess of 100,000 tons. The marine operations are supported by an air-cushion vehicle (ACV) division and a trucking subsidiary. During the normal May to October navigational season, NTCL employs approximately 1,050 persons, many of whom are residents of the region it serves.

Review of 1975-76

During the year under review, the total marine volume handled was 347,000 tons compared to 337,000 tons in 1974. While this represents a very modest increase in total tonnage, freight for the Mackenzie sector dropped by 11,000 tons. Freight moved in support of the oil and gas exploration industry decreased slightly but shipments to the Alaska North Slope more than doubled. The first year of service to the District of Keewatin involved the movement of more than 21,000 tons of cargo. It was fortunate that in spite of the severe and remote wintering locations placed upon the majority of the fleet by the unusually early freeze-up, the mobilization in the spring was without incident. The conditions experienced during the navigational season on the Mackenzie River and the Western Arctic routes to the east as far as Spence Bay approached those of a normal historical weather pattern. However, the Alaska North Slope route was constantly hampered by persistent ice floes which ultimately caused the wintering of two vessels and ten barges at Prudhoe Bay, Alaska. The remainder of the fleet was wintered in home ports at Hay River and Tuktoyaktuk, NWT.

The Keewatin operation, in its first year, presented certain operational challenges due mainly to the high tidal conditions and uncharted and unbuoyed reef and boulder-strewn channels leading to the communities. However, in spite of nature's inauspicious obstacles, the navigational season was concluded successfully. All community resupply and essentially all other freight was delivered.

For the third consecutive year the two ACV's were utilized to supply the unique transportation requirements of the off-shore Arctic drilling operations in the Beaufort Sea. The hovercraft were used principally for personnel transport, cargo resupply and safety standby services under contract to major oil companies.

Grimshaw Trucking and Distributing Ltd. provides a general merchandise trucking service to a number of Northern Alberta communities and three major centres in the Northwest Territories. The Company's service complements the water transportation system making intermodal service possible at Fort McMurray, Alberta and Hay River, NWT. The Company now operates twin trailer trains to most of its terminals and triple trailer trains between Edmonton and Calgary.

The Company enjoyed significant advances in the areas of traffic and operational control as a result of the implementation of a Traffic Information Network (TIN) which utilizes the resources and communications advantages of an installed computer system. The system incorporates features highlighted by: the control of general cargo and stockpile inventories; a complete billing function; the creation of receiving, loading, in-transit and discharging documents; a comprehensive fleet and shipment tracking capability; and the automatic accumulation of marine logistics data.

A Financial Reporting and Management Information System was also developed to provide the essential requirements to make timely decisions in response to changing business conditions and a compressed operating season.

The common shares held by the former parent, Eldorado Nuclear Limited, were transferred to the Minister of Transport in trust for Her Majesty in right of Canada, thus bringing to an end a long and very rewarding association.

Plans for 1976-77

The Company does not anticipate any increase in marine tonnage for 1976, and it is expected that only that portion of the fleet will be mobilized that will ensure the efficient delivery of all marine cargo. In view of the uncertainty surrounding the 1976 season; a capital expenditure program of \$2,100,000 will be directed at completing improvements to some shore facilities and the ongoing replacement of material handling equipment.

Long-term Plans

Considering the improved living standards of the northern population and the tremendous natural resource potential of the areas served, the Company's long-term position is regarded as being promising. The Company continues to be aware of the vital part which transportation plays in the development of Canada's North, recognizing its responsibility to provide, at a reasonable cost, the highest level of service to communities and customers scattered throughout a very large area, including services which cannot, in themselves, be self-supporting. The Company will constantly strive to strengthen its competitive position through innovations and the creative pursuit of ever-improving operational standards.

Post Office Department

Responsibilities

Provision of postal service in the Yukon and Northwest Territories.

Review of 1975-76

A new position of Assistant Area Manager was established at Val D'Or to improve the service offered to the Northwest Territories.

The frequency of service to Pond Inlet was increased from every two weeks to weekly. A direct mail despatch is now made to Strathcona Sound which contributes to a better service. Parcel post delivery service was inaugurated at Yellowknife.

Plans for 1976-77

The possibility of increasing the frequency of mail service to points served by Resolute is being studied.

The provision of postal service to serve the hydrocarbon resource development and pipeline construction activities will be planned. This may result in some improvements to service at existing communities.

Long-term Plans

To provide adequate postal service, including mail transportation services to and throughout the Yukon and Northwest Territories.

Royal Canadian Mounted Police (RCMP)

G" Division

Responsibilities

The Royal Canadian Mounted Police – "G" Division is responsible for policing the Northwest Territories. Its objective is to prevent crime and to enforce laws and ordinances. In this it acts as a Federal Force and as a Territorial Force under contract with the Territorial Government. "G" Division, with its Headquarters located in Yellowknife, NWT is comprised of three sub-divisions; Yellowknife, Inuvik and Frobisher with a total of 32 detachments. Air detachments are also located in Yellowknife, Inuvik and Frobisher which provide vital support service to Police operations.

Review of 1975–76

Statistics show that crime increased, particularly in all categories, during the last year. As in the past, the main contributing factor has been the use of alcohol, which remains the single largest social problem in the North today. Drug abuse has also increased; however, to date, there has been no sign of hard drugs being utilized. These offences are mainly confined to the larger centres, with very few being reported from the outlying settlements.

The RCMP continue to promote police/community relations by organizing preventive policing programs and by providing leadership to the young people in communities to involve them more in community affairs and recreational endeavours. Emphasis is placed on the recruitment of natives as public servants and members of the Force.

Rotational Police Services are being provided to remote settlements, where there is no established detachment to provide police presence when the need arises. Gradual expansion of this service is visualized.

Patrol cabins were installed at Fort Wrigley and Fort Franklin.

Construction was started on the new Fort Simpson Detachment building, with completion expected in the fall of 1976.

Plans for 1976–77

Major plans include the completion of construction of the Fort Simpson Detachment building.

Seven double-wide trailers will be set up at Frobisher to house additional married personnel; and new detachments will be opened at Strathcona Sound, Snowdrift and Fort Franklin.

The Hay River Detachment building was destroyed by fire in February 1976. Construction of a new building is planned for the early spring of 1977.

Long-term Plans

The RCMP is continually reviewing long-term plans. Increases in manpower and expansion of facilities to provide appropriate police protection are visualized. Economic development in the North continues to be a major factor and the Force must be flexible and project thinking as to possible future developments so as to prepare to meet responsibilities.

"M" Division

Responsibilities

"M" Division is responsible for policing the Yukon Territory. Basic responsibility is to preserve the peace and maintain law and order, which includes the enforcement of Federal Statutes and Territorial Ordinances. "M" Division staff consists of 99 members and public servants.

Review of 1975–76

Construction is currently underway on the new Whitehorse Detachment and "M" Division Headquarters building at 4100 – 4th Avenue, Whitehorse. Completion is tentatively scheduled for the fall of 1976.

Married accommodation has been established at Ross River and a married Corporal is now posted to that location.

Due to the Yukon's high impaired driving rate, the Yukon Territorial Government has joined with the Force in implementing a prevention program known as "Yukon Check-Stop".

A two-man Police Community Relations Unit has been established at Whitehorse Detachment on a trial basis.

Janitorial Contracts have been let at five detachments and part-time stenographical help has been acquired at two detachments. Time previously spent on those duties by members can now be devoted to police work, thereby providing a better service to the public.

Plans for 1976–77

Establishment of a Police Service Dog Section in Whitehorse should be realized during the summer of 1976.

A Division Property Manager in Whitehorse should be established during April 1976.

The installation of a VHF F/M Radio Telecommunication System, the location of one double wide mobile housing unit at Watson Lake and the provision of breathalyzer instruments for Beaver Creek and Ross River Detachments are planned for next year.

Long-term Plans

Long-term plans are continually under review to provide adequate detachments and manpower to meet requirements. Development of the North and its resources are the most significant factors affecting these plans.

To provide for efficient and effective law enforcement, the following sections and positions should be established during the fiscal year noted:

- Commercial Crime Section (77–78);
- Protection of Property Section (77–78);
- Police Community Relations and Crime Prevention Section (77–78);
- Planning Section/Division Data Analyst (77–78);
- Division Training NCO (79–80);
- S/Cst. Process Server, Whitehorse Detachment (77–78).

A permanent detachment is tentatively planned for Carcross in 1977–78.

Manpower will be increased at the Dawson Detachment for highway patrol coverage to coincide with the completion of the Dempster Highway in 1978.

Statistics Canada

Labour Force Survey Division

Responsibilities

To estimate the number of persons employed, unemployed or not in the labour force, using a monthly sample survey of households.

Review of 1975-76

A feasibility study was initiated to investigate the problems associated with extending the Labour Force Survey to include the Yukon.

Plans for 1976-77

Statistics Canada will be conducting the 1976 Quinquennial Census of population, housing and agriculture across Canada.

Transport Canada (MOT)

Arctic Transportation Agency

The Arctic Transportation Agency determines and controls development of the transportation infrastructure in the Territories which comes under Transport Canada. The Agency aims to provide multi-modal transportation systems which will contribute to the achievement of the national objectives for northern Canada. To do this most effectively, it is necessary to continually assess the alternate uses to which the limited transportation resources may be applied, and to establish priorities.

Co-ordination and consultation with the Territorial Governments, industry and other organizations is essential. The Agency is involved in formulating an inter-modal plan for transportation systems in the Territories, including the air and marine modes as well as the use of road, rail, pipeline, hovercraft and other facilities so as to ensure appropriate and improved services on an integrated basis in the North and to ensure that future government programs will reflect the mix of modes which will prove to have the greatest cost benefits to northern residents.

Co-ordination with other government departments and agencies is carried out through the Advisory Committee on Northern Development and the Task Force on Northern Oil Development. The role of Transport Canada and the activities of these committees is centered in the Arctic Transportation Agency, and its Administrator is Chairman of their respective transportation committees.

A consultative approach is being used to determine the major problems and priorities of northern transportation; this approach will be considered in developing the transportation policy. Three areas are under study: the Yukon, Mackenzie Valley, and the Hudson's Bay and Arctic Islands. The Quebec-Labrador land corridor has also been included in the study because its transportation problems are similar to those of northern Canada.

The Agency continues to accelerate development of the projects which will satisfy the growing needs resulting from changing requirements in the North. A study of the viability, costs and benefits of alternate railway strategies for the Yukon has just been completed.

Implementation of the comprehensive policy to upgrade airports and air navigation facilities and services in the Canadian Arctic, approved by Cabinet in February 1974, is continuing. It is anticipated that more than \$24 million will be spent on the capital, operation and maintenance of such facilities during the 1975-76 fiscal year.

An important part of the program is the training of residents of the smaller remote communities to undertake the responsibility for operating and maintaining the airport and associated facilities and services. These include the operation of vehicles for summer and winter maintenance of runways and aircraft parking areas, communications services and meteorological observing responsibilities. It is anticipated that the improved terminal facilities and navigational aids, together with radio communications and meteorological services, will result in a more reliable air service for the smaller communities in the North.

A brochure entitled, *Arctic Airports*, has been completed in English, French and Inuktitut to explain Transport Canada's airports program. Further brochures on airports, training and air service regulations are proposed.

A study of Arctic air services has been completed and recommendations for policy action and program changes are being developed. A statement of principles is proposed which will establish minimum service criteria for Arctic air services, especially for those to smaller communities now served by irregular air services. The de Havilland Dash-7 aircraft is being evaluated as a cost-effective solution to improve air services for a number of areas.

The Arctic Transportation Agency co-operates with other agencies for the continuing improvement of the annual eastern Arctic resupply operation. In 1975, a new service to six communities on the west coast of Hudson Bay was inau-

gurated by the Northern Transportation Company, operating from Churchill, Manitoba.

For the remainder of the eastern Arctic, Transport Canada continues to co-ordinate the annual resupply to communities and federal government installations.

A proposal for major channel improvements on the Mackenzie River is now being prepared for consideration and the requirements for an environmental assessment are being determined.

The Arctic Transportation Agency maintains close contact with the Territorial Governments and organizations in the North. It responds to various requests for assistance and support concerning Transport Canada's role in the Arctic.

Canadian Air Transportation Administration

The Canadian Air Transportation Administration provides and operates domestic airway facilities, a transborder, National and international air terminal system and the regulatory services needed for aviation safety. It also is responsible for provision of air traffic control and international airway facilities and services in those areas (such as the North Atlantic) assigned by the International Civil Aviation Organization (ICAO), or for which Canada has otherwise accepted responsibility. Two Directorates, Airports and Construction Services and Civil Aeronautics, provide facilities and services in support of civil aeronautics, consistent with the protection of the environment.

Civil Aeronautics

Responsibilities

The Civil Aeronautics Directorate is primarily responsible for the Regulatory and Air Navigation Services program which is conducted under the authority of the Aeronautics Act. The Headquarters Organization is responsible for policy and development, while the six Air Regions: Pacific; Western; Central; Ontario; Quebec; and Atlantic handle operations and maintenance. The Director General

of Civil Aeronautics has six major responsibilities: the development of legislation, standards and regulations for the control of civil aeronautics in Canada and establishment of policy regarding licensing, inspection and enforcement; the control of air traffic movement in Canada and other airspace for which Canada has accepted responsibility; the provision, maintenance and operation of Telecommunications and Electronic facilities and services; the determination of national priorities for civil aeronautics requirements for facilities or services; the establishment of standards for control of civil aircraft, the investigation of aircraft accidents, overall security of civil aeronautics and promotion of aviation safety; and the direction of the operational control of Transport Canada aircraft and helicopters.

Review of 1975-76

A study of the Mackenzie Valley, NWT, Northern Yukon and Northern Alberta was conducted to determine the need for additional air facilities and CATA services over the next 20 years.

A Sub-Regional Office was established in Yellowknife to provide day-to-day liaison with the Territorial Government and other federal agencies and to provide a licensing service, guidance and advice to aircraft operations.

Air Traffic Services

Review of 1975-76

Air Traffic Services (ATS) continued to provide area control service for flights operating under instrument flight rules in the Arctic Control Area of Canada. This area extends basically from 72° north to the geographical North Pole and above flight level 290. The service provided protection and separation for commercial carriers operating between Europe and the Orient that stage through Alaska; also a service to domestic flights operating north/south into and out of the Arctic Islands. In support of this service, ATS operated a discrete telephone circuit from the Edmonton Area Control Centre (ACC) to Cambridge Bay, NWT, with switching arrangements at this point into the Reykjavik ACC in Iceland and with the Anchorage air route traffic control centre in Alaska.

In the Northern Control Area of Canada, area control service was provided for all flights operating at flight level 230 and upwards. Flights which benefited from this service were commercial operators, operating between Europe and western North America, and domestic carriers and operators flying in northern Canada.

A major restructuring of the Southern Control Area was made to extend the northern boundary to a line roughly north of Inuvik, Yellowknife, Churchill and Frobisher. In addition, changes were made to the Area of Compass Unreliability and the Altimeter Setting and Standard Pressure Regions. The base of the Southern Control Area was lowered to flight level 180 to provide additional area control service.

In the low level airspace, controlled airways were designated from Yellowknife to Inuvik, along the Staging Route to Alaska, and from Goose Bay to Frobisher, North of 60° Latitude, Control Area Extensions were provided at:

Fort Smith
Hay River
Yellowknife
Fort Simpson
Norman Wells
Inuvik
Whitehorse
Watson Lake
Teslin
Frobisher.

Control Zones for additional protection and improved service to the operators were provided at the following airports:

Fort Simpson
Norman Wells
Watson Lake
Positive Control Zones are available at:
Inuvik
Yellowknife
Whitehorse.

Aerodrome Traffic Zones for the additional protection of aircraft operating at an uncontrolled airport are in effect at:

Cambridge Bay
Fort Resolution
Resolute
Wrigley.

Airport Control Towers remained in operation at Yellowknife, Inuvik and Whitehorse.

A transportable Airport Control Tower is being held in Edmonton to enhance ATS' capability to provide Airport Control service on a short-notice basis.

Centre peripheral VHF facilities were available at Saglek, Fort Nelson, Whitehorse and Inuvik.

Scientific rocket firing continued to be accommodated at Churchill, Manitoba and at Cape Parry, NWT.

The Arctic Track System and the Northern Track System continued to provide an improved service to international aviation in the North.

Western Region

The phaseout of Sondrestrom ACC resulted in a restructuring of the NAT (North Atlantic) Region. Co-ordination of international operations is now effected between Reykjavik ACC and Edmonton ACC via a discrete telephone circuit through Cambridge Bay, NWT. This circuit is also used for co-ordination between Edmonton ACC and Thule, Greenland Terminal Control, and Sondrestrom Flight Information Centre to the east; and between Edmonton ACC and Anchorage Air Route Traffic Control Center to the west.

The installation and commissioning of new VOR/DME facilities saw an increase in VHF signal coverage, permitting the designation of additional controlled airways. To maximize the benefits from these new VHF airways, new centre peripheral radio facilities (PAL) were established at Norman Wells, Hay River and Yellowknife.

Long-term Plans

Plans are progressing for the provision of control service to Resolute, NWT. Expansion of the existing PAL in the North is being given active consideration in conjunction with the provision of additional airways and areas. Particular attention is being given to the level of aerial activity in the Mackenzie Delta to ensure that the system responds to a sudden demand for services to support resource exploration or pipeline construction.

Aviation Safety Bureau

A number of federal government departments are embarking on active training for their employees who are sent to work in the North. The emphasis on this training is for survival in case of a forced landing or crash, or of becoming lost. The programs emphasize the need for an understanding and respect for the unique problems created by operating in severe environments – particularly in winter. Of significance is the type of clothing worn and/or carried by federal government employees, as well as the additional survival requirements of Air Navigation Order Series V, No. 12 Sparsely Settled Area, Schedule II.

These government programs are seen as providing leadership to the aviation community for the protection of flight crews and passengers in both commercial and private aircraft corporations in the North. This has long been advocated by the DND's Search and Rescue Organization, active in rescue work in the North.

Telecommunications & Electronics Branch

Communications

Review of 1975–76

In support of northern aviation, communication equipment for aeronautical communication terminals was assembled. These systems will be used at Arctic B airstrips as soon as the training of personnel to staff them is completed.

The Atmospheric Environment Service teleprinter network was extended via the ANIK satellite to Baker Lake and Coral Harbour. An air traffic service circuit was introduced into the network via ANIK connecting via terrestrial facilities with Edmonton, Winnipeg and Gander Control Centres. The newly 35 Northern Aeradio stations have the capability to transmit on the HF air-ground frequency 3 MHz. When Chesterfield airstrips are modified for use during the summer of 1976, the stations north of 60°N will be modified.

Dawson Aeradio was re-located from the old operations site in town to a new air terminal building constructed by the Yukon Territorial Government at the Dawson City Airport.

Aeradio stations at Fort Good Hope and Wrigley were remoted to Norman Wells and Fort Simpson respectively, providing full 24-hour communications coverage from these stations where previously, the aeradio was not manned 24 hours a day.

New receiver sites were constructed at Inuvik and Whitehorse to provide higher standard radio communications.

A UHF airport utility communication system was installed at Whitehorse to help airport staff co-ordinate their activities.

The appropriate Area Control Centres have extended VHF coverage at Churchill, Peace River, Fort Nelson, Inuvik, Whitehorse, Yellowknife, Hay River and Norman Wells.

The Air Services Automated Data Interchange System was extended via the ANIK Satellite to Poste-de-la-Baleine and Inoucoujac.

Plans for 1976–77

During the summer construction season in the Arctic a new antenna system for reception of weather maps will be installed at Resolute. Other renovations will be made in the receiving terminal which will lead to higher reliability of reception of weather information from the south.

The Atmospheric Environment Service automated teleprinter network via ANIK will be extended to Cape Dorset. It is intended that existing teleprinter service to Cambridge Bay, Cape Parry, Hall Beach and Cape Dyer be upgraded to be included in the automated network. It is proposed that Resolute be added to the existing ANIK voice circuit connecting Frobisher with Edmonton, Moncton and Gander Control Centres.

A remote communications facility will be built on King Solomon Dome near Dawson which will greatly improve VHF radio communications coverage in the Dawson area.

Unicom VHF communications systems will be installed at the Arctic B and C airstrips at Faro and Old Crow in the Yukon and at Fort McPherson and Fort Resolution in the Northwest Territories.

Replacement and up-grading of communications equipment will be done at various locations to improve the quality of service.

Long-term Plans

The Atmospheric Environment Service intends to extend their automated teleprinter network service to many northern communities either by employing conventional teleprinter equipment or automatic reporting stations.

Relocation of the aeradio station from Chesterfield Inlet to Rankin Inlet has been under consideration for several years. There is no firm target date at this time for this relocation. It is also planned to commission an aeradio station at Hall Beach in 1977–78.

Navigation Aid Facilities

Review of 1975–76

VHF/UHF Nav aids – VHF omni-range (VOR) were commissioned at Baker Lake, Fort Simpson, Fort Nelson, and Hall Beach. The VOR's at Fort Nelson and Fort Simpson have distance measuring equipment (DME) located at the VOR site. DME was commissioned with the VOR at Churchill, Manitoba.

LF Nav aids – Non-directional radio beacons (NDB) were commissioned at Clyde River and Strathcona Sound. An NDB at Hall Beach was taken over from the US Air Force and an NDB at Resolution Island was decommissioned. The low frequency radio ranges (LFR) at Teslin, Burwash and Yellowknife were downgraded to radio beacons.

Omega Monitoring

Four automatic monitoring facilities were installed at Frobisher, Resolute, Inuvik and Coral Harbour. The propagation data resulting from these studies will be included in the world-wide data bank.

Installation of electronic equipment has been completed at the Watson Lake VOR. The facility is being operated on test; commissioning early in 1976 is anticipated. Site construction is nearing completion at the Wrigley, Fort Good

Hope and Hay River VOR/DME sites. Electronic equipment will be installed at Wrigley and Fort Good Hope in the spring of 1976 and the equipment installation will be done at Hay River when equipment is delivered in the fall of 1976.

Control of the VHF/DF systems was extended to radio stations at Inuvik and Yellowknife. This extension provides VHF/DF service on a 24-hour basis, including times when air traffic control towers are not operating.

Norman Wells VOR/DME was commissioned in December of 1975.

Radio range sites at Teslin, Whitehorse and Yellowknife were converted to non-directional beacons.

A new VOR antenna, the first of its type in North America, has been installed at Inuvik. It is expected that this antenna will resolve previous technical problems.

Plans for 1976-77

VHF/DF systems will be installed at Watson Lake and Hay River.

VOR/DME installations will be completed at Wrigley, Fort Good Hope and Hay River as indicated above.

Non-directional beacons will be installed at the Arctic B and C airstrips at Faro and Fort McPherson.

Control of the VHF/DF will be extended to the aeradio station at Whitehorse to provide full 24-hour coverage.

Long-term Plans

New or additional navigational aid facilities are planned for Fort Simpson (1977-78), Fort Smith (1978-79) and in future years, at Hall Beach, Rankin Inlet, Resolute, Burwash and Cambridge Bay.

Airports and Construction Services Directorate

Responsibilities

The role of the Directorate relates to the provision, maintenance and operation of the National Airports System and to the planning, design, construction and maintenance of all airport facilities (except non-visual aids, air traffic services and related equipment). Responsibilities involve the establishment of national objectives, plans, priorities, policies and standards, regarding marketing, provision and maintenance of airport facilities

and services and for policing and security at airports. There are 875 licensed airports in Canada; 90 are owned and operated by Transport Canada, and another 70 owned by Transport Canada are operated by local communities, individuals or organizations on behalf of Transport Canada. The remaining 715 are owned and operated by municipal, provincial, military and other governmental agencies or private organizations. In respect of Transport Canada airports, the Directorate and affiliated regional organizations plan, design and construct airport facilities, and manage, operate and maintain plant equipment and services at the various airports. With regard to non-Transport Canada airports, the Directorate provides guidance and assistance in the planning, construction and maintenance of facilities, and financial assistance where appropriate.

This Directorate is responsible for all major construction and for providing design packages for projects undertaken by the Regional Administrators. Development of training programs, policies and standards for the provision of safe efficient and most economical utilization of available resources, in conjunction with other government departments and agencies is also carried out.

Review of 1975-76

The Arctic Transportation Policy to upgrade airports and associated facilities, approved by the Cabinet in February 1974 is being implemented.

Guidelines for the establishment of Land Reserves for Arctic Airports were published (AO 13.13). A steering committee chaired by the Regional Administrator, Western Region, co-ordinated and co-chaired by Central and Quebec Regional Administrators, in participation with the branches at headquarters, has prepared draft operational and management guidelines for the management of the Arctic B and C airports. When completed, this program is expected to provide valuable resources for the management of the smaller airports in the North and related facilities and services. Site selection has almost been completed by the three (Quebec, Central and Western) regions.

Preliminary work has been completed in consultation with the DOE/AES officials for the transfer of the airport operational and management responsibilities of the High Arctic Weather Stations (HAWS) Aerodromes from DOE/AES to Transport Canada.

A new MOU has been prepared and is awaiting approval. The cost for this undertaking is estimated to be \$200,000.

Expenditure for the Arctic airports is estimated at \$60 million, to be spread over a period of five years. Approximately \$40 million will be allocated for the development of Arctic community airports. About \$12 million was expended during the 1975-76 fiscal year.

Arctic Airport Program, Memorandum of Understanding (MOU) between Transport Canada and DND

Negotiations are underway for continued participation by DND for the construction of the Arctic airports. The terms of reference setting out the allocation and implementation of responsibilities concerning this program will be in the form of an amendment to the existing MOU, signed by the two Deputy Ministers in 1974.

Northwest Territories

At Fort McPherson an extensive up-grading program is nearing completion which will include a passenger cargo shelter, equipment storage garage and runway development; temporary airport lighting systems were installed. At Fort Simpson paving of runway 12/30 finished; taxiway and apron work is scheduled for 1976-77. Major runway repairs were carried out at Hay River and high intensity approach lights installed. Redevelopment of Inuvik base has been accomplished and Yellowknife's air terminal building re-roofed and a new firehall built. Temporary airport lighting systems installed at Paulatuk.

Strathcona Sound - The construction of an Arctic B type airport and facilities at an estimated cost of \$1.5 million is progressing on schedule. The airport is being constructed under the supervision of the Canadian

Hall Beach – Take over by Transport Canada of these airport facilities and services from the DEW line (USAF). Operations were completed in July 1975.

Coppermine – Extension of the runway and other improvements to the airport, assisted by Gulf Oil Corp., the Coppermine community and Transport Canada (Western Region), are due for completion in 1976.

Coral Harbour – The development of a 4,000' X 75' airstrip, initiated by the Lake Harbour community and assisted by the Quebec Region, is progressing satisfactorily. Site selection for a passenger/cargo shelter and an equipment garage has been conducted.

Resolute – A contingency plan for oil spills has been completed. Preparations for the relocation of the Resolute Townsite by the Government of the Northwest Territories are being co-ordinated with Transport Canada. As a result of this program, the Department is expected to make provision for married accommodation at Resolute.

Rankin Inlet, Belcher Islands – Air/ground console unit was procured, installed and operational by August, 1975. One non-directional Beacon (NDB) was installed in late September 1975; antenna erected in January, 1976; beacon operational and to be flight checked March, 1976; new site for gravel airstrip selected in July, 1975; survey completed September, 1975; airstrip to be constructed in 1976 for local inhabitants using Transport Canada construction equipment; package of construction equipment has been requisitioned with delivery scheduled prior to March 31, 1976.

Clyde River – NDB installed March/April 1975. A site selection for a passenger/cargo shelter and an equipment garage has been conducted.

Angnirtung – A survey was conducted by consultant engineering firm in regards to planned construction of a passenger/cargo shelter and equipment garage.

Broughton Island – Survey crew was unable to complete an assignment in connection with the proposed relocation of an aircraft parking ramp and construction of a passenger/cargo shelter; USAF DEW line Base Commander informed Transport Canada crew that prior authorization from headquarters in Colorado Springs would be required to conduct a survey at the airstrip.

Port Burwell – Site selection for a gravel airstrip proved inconclusive. Rocky, mountainous terrain presents a formidable challenge and estimates in manpower and monetary resources vary between two and five million dollars. Further studies continue.

Cape Dorset – Airfield lighting kit on order for delivery prior to March 31, 1976. Work on an airstrip (4,000' x 100') by DND for Transport Canada is well advanced. The airstrip is usable and only light surface topping remains to be done in 1976-77. Site selection for an air passenger/cargo shelter and an equipment garage was conducted.

Pond Inlet – Airstrip construction 4,000' x 100' by DND for Transport Canada is estimated at 50 per cent complete.

In 1975-76, Central Region's Arctic Program concentrated on runway development and extensions. These developments at Strathcona Sound, Rankin Inlet, Pond Inlet, Cape Dorset, Eskimo Point and Igloodik will be continued in 1976-77. It is hoped through these developments the aviation system of the Keewatin District will become more fully developed. The development at Strathcona Sound is a full airport development in support of the Nanisivik Mine site and when complete, will form a strong aviation focal point for the Northern Baffin Island Region.

In order to provide better service to aviation in the North, Petroleum Lubricants and Oil (POL) facilities are being upgraded at Resolute and Hall Beach. The facility at Hall Beach is the first part of the entire program to upgrade the site taken over by Transport Canada July 1, 1975.

Air navigation facilities in the North were upgraded during 1975-76 in order to improve operation flexibility of aviation while maintaining a high level of safety. The major facilities included the establishment of a VOR/DME at Baker Lake and Hall Beach along with the commencement of a VOR/DME at Coral Harbour. The Region also completed the installation of VASIS at Baker Lake.

Yukon Territory

A new air terminal building with new aeradio equipment is in place in Dawson, while taxiway, apron and related work is scheduled for Haines Junction along with a passenger/cargo shelter for Old Crow.

Starting in 1976, construction equipment, including a gravel crusher and earth moving machines, will be placed at various remote Arctic sites not having a local contractor, to expedite the Arctic B and C program.

Whitehorse – Escarpment program and security fencing was completed in 1975.

Plans for 1976-77

Broughton Island – relocate aircraft parking ramp; construct passenger/cargo shelter; install aircraft refuelling facilities; update air-ground communications and meteorological services.

Cape Dorset – DND to top off airstrip surface; portable field lighting kit to be installed (includes field taxiway and ramp lighting, approach lights, rotating beacon, lighted windsock, strobeacons both ends); passenger/cargo shelter and equipment garage to be constructed; improvement of airfield maintenance equipment and air/ground communications.

Clyde River – gravel airstrip to be upgraded; installation of wind-sock and overhead power line; update air/ground communication and point-to-point communications.

Frobisher – resurface runway Phase I of a two-year project; replace various vehicles; interchange diesel generator units; replace indoor regulators.

Lake Harbour – extension and upgrading of airstrip to 2,000' x 75'; updating of airfield maintenance equipment, meteorological services and air-ground communications.

Pangnirtung – install rotating beacon, lighted windsock; construct passenger/cargo shelter and equipment garage; update airfield maintenance equipment, air-ground communications and meteorological services.

Pond Inlet – continue airstrip construction; install windsock and aircraft refueling unit; update airfield maintenance equipment.

Sanikiluaq, Belcher Islands – Construct a gravel airstrip approximately 3,500' x 100'.

Overhead power lines, from source of available supply in villages to airfields, are to be constructed in 1976 for Transport Canada by NCPG at all the aforementioned sites.

Major runway developments at Cape Dorset, Eskimo Point, Pond Inlet and Rankin Inlet will be continued. Additional runway, taxiway and apron development programs to meet Arctic policy standards will be undertaken at Chesterfield Inlet, Repulse Bay and Whale Cove. The airport development at Strathcona Sound will continue with 1976–77 being a year of major construction activity on the runway, taxiway and apron.

In order to maintain ground facilities in the North, Transport Canada's Central Region's 1976–77 program includes maintenance garages at Baker Lake and Whale Cove. Also included in the groundside development program are Air Terminal and Operations Buildings at Eskimo Point and Rankin Inlet, along with a major powerhouse and runway lighting program at Rankin Inlet. The continuation from 1975–76 of the upgrading of Hall Beach will be in the form of an NDB, installation of the POL facility and the development of a larger aircraft apron.

The provision of service to aviation in the form of weather information, communication, and navigational aids will receive emphasis along the Western Hudson Bay shore. There will be a development of meteorological instrument sites at Igloolik, Rankin Inlet, Eskimo Point and Repulse Bay. In support of improved communication VHF and point to point communication facilities will be established at Gjoa Haven and Eskimo Point. The improved navigational aid program includes replacement of NDB's at Repulse Bay, Eskimo Point, Rankin Inlet and Igloolik.

One other project being undertaken to improve conditions of government employees in the North is the development of modern staff accommodation at Coral Harbour Airport.

A curriculum has been developed to launch a pilot program to train local people to operate and maintain the Arctic B and C airports. The program has been tentatively scheduled to be held at the Adult Vocational Training Centre at Fort Smith, NWT.

A master plan for the Norman Wells Airport has been completed and master plans for Inuvik, Yellowknife and Hay River are under way. Master plans eventually will be prepared for Cambridge Bay, Fort Resolution, Fort Smith, Whitehorse and Weston Lake.

Projects ranging from installation of a passenger/cargo shelter to major airport development are scheduled for Aklavik, Arctic Red River, Coppermine, Fort McPherson, Hay River, Inuvik, Sachs Harbour, Tuktoyaktuk, Watson Lake and Yellowknife in the Northwest Territories; and at Dawson City, Mayo and Old Crow in the Yukon.

Long-term Plans

Through 1977–78 and beyond, similar programs have been scheduled for Cambridge Bay, Fort McLeod, Fort Nelson, Fort Simpson, Fort Smith, Holman Island, Norman Wells and Yellowknife, all in the Northwest Territories; in the Yukon, Haines Junction, Burwash Landing, Ross River and Teslin are included in the program.

Because the five-year program is under constant review and evaluation, projects may be advanced or delayed and new

projects added. All existing airport facilities in the North will be improved and new facilities, consistent with the aviation and air transportation needs of the Arctic, will be developed.

Guidelines for the provision of Land Reserves in the Arctic and the Yukon will be updated as required in consultation with the appropriate government departments and agencies.

As a result of more direct management control by Transport Canada, all HAWS Aerodromes are expected to become Aerodromes.

The overall purpose of Transport Canada's Canadian Air Transportation Administration is to make civil aviation safe and reliable. This is accomplished through the provision of air and ground facilities and services, but the formal expression of this objective is "On a cost recoverable basis, to the maximum practicable extent, to provide safe and efficient facilities and services for the support of aeronautics, consistent with the protection of the environment." Transport Canada will continue to work towards achieving this global objective both in the south and in the north of Canada, and from coast to coast.

Canadian Marine Transportation Administration

In August 1975, the Marine Services component of the Canadian Marine Transportation Administration was retitle the Canadian Coast Guard, a title more intended to more clearly describe the activities and purpose of the largest component of the CMTA. The Canadian Coast Guard embraces seven branches at Transport Canada headquarters in Ottawa, with field operations the responsibility of five Regional Directors.

Canadian Coast Guard

Responsibilities

To carry out and co-ordinate the delivery of cargo and passengers for the Canadian Government, USAF and Canadian commercial interests; to provide ice and routing information and, when necessary,

to provide icebreaker support for vessels of all kinds including drilling rigs navigating Arctic waters and Hudson Bay; to carry out environmental research and surveys as requested by other government agencies; to install, operate and maintain marine aids to navigation; to carry out marine search and rescue operations; to administer the Navigable Waters Protection and Arctic Waters Pollution Prevention Acts.

Review of 1975-76

During the 1975 navigation season, Transport Canada deployed five heavy and three medium icebreakers to provide assistance to commercial ships operating in eastern Arctic waters. In addition, one northern supply vessel was seconded for Arctic operations.

CCGS NARWHAL was engaged in an extensive hydrographic survey program in Hudson Bay during the 1975 season. Although the primary function of the Canadian Coast Guard icebreaking fleet was to ensure that icebreaker support was available to marine interests, CCGS Louis S. St. Laurent, CCGS John A. Macdonald, CCGS d'Iberville, CCGS Labrador and CCGS Norman McLeod Rogers were, on an opportunity basis, engaged in hydrographic surveys as a supplement to their primary assignment. These surveys included verification of existing soundings, pipeline profile crossings, as well as an extensive wharf survey at Strathcona Sound.

Because of very severe ice conditions in the western Arctic which made it impossible for CCGS Camell to cope with heavy demands for icebreaker escort, it was necessary for CCGS John A. Macdonald to sail from Lancaster Sound and proceed to Tuktoyaktuk via Victoria Strait. The primary operation for John A. Macdonald while in the western Arctic was in support of the self-propelled suction dredge Beaver Mackenzie, beset west of Herschel Island in 10/10 multi-year ice. The icebreaker successfully escorted the dredge to its destination at Tuktoyaktuk and then returned to Lancaster Sound to support the end of season shipping in the eastern high Arctic.

Waterways development expertise has been provided for the studies of the proposed deepening of the access channel to Tuktoyaktuk, for the study of alternative medium draft marine terminals in the Beaufort Sea, and for ice forces on marine structures at the Strathcona Sound offshore terminal.

A study of ice impact forces on ships' hulls was initiated; it is expected that valuable information will be derived for the future design and specifications of vessels travelling in the North.

A mathematical analysis has been carried out and reported on concerning the effect on the water levels in the MacKenzie River of a proposed major dredging project for the River.

Information on marine transportation in the Mackenzie Basin was collected and supplied to the Mackenzie Basin Intergovernmental Liaison Committee.

A hydraulic model study for offshore terminals to be used by large vessels is being carried out in Transport Canada's Hydraulic Research Centre.

During the 1975 Arctic resupply operation, delivery of dry cargo was on a weight/measurement basis and delivery of bulk petroleum products was made by three tankers on time charter. A fourth tanker was chartered to transport bunker fuel to the Canadian Coast Guard icebreakers in the high Arctic.

In addition to the Canadian Coast Guard ships, 16 commercial vessels were engaged and approximately 50 northern settlements were served by these vessels. Approximately 55,000 short tons of cargo was delivered of which 75 per cent was bulk petroleum products and the remaining 25 per cent dry cargo.

Ten coast stations in the Arctic and Hudson Bay provided a marine communication safety and public correspondence service to ships in these waters. Four of the coast stations provided a Marine Telephone service. A family of high frequency radiotelephony single sideband frequencies were commissioned at Frobisher to provide wide-area ship/shore radiotelephone communication coverage. The coast station operation at Resolution Island was relocated to Port Burwell, NWT, and named Killiney Coast Guard Radio.

More than 2,900 navigational aids were installed, serviced and maintained in the eastern and western Arctic during the 1975-76 season. These aids include lighted and unlighted buoys, shore aids, racons, radio beacons and radar beacons. A traffic advisory system has been developed for the Mackenzie River to assist safe passage in hazardous areas.

Long-term Plans

To meet the growing requirements of marine safety for icebreaker support in the Canadian Arctic, Transport Canada has received approval for the construction of two R Class icebreakers with an improved capability over CCGS Norman McLeod Rogers. Burrards, of Vancouver, have been awarded the contract for the construction of these icebreakers. The addition of these vessels will alleviate the situation in the Arctic in the summer months, and on the Great Lakes and in the Gulf of St. Lawrence during the winter.

Transport Canada has awarded a design study contract for a Polar VII class icebreaker which, if constructed, will allow the season to be extended throughout the Arctic Archipelago and should provide a 12-month capability in Lancaster Sound as far west as Melville Island.

Hydraulic and ice studies will be carried out to support further development and improvement of the marine activities in the Canadian Arctic and the winter navigation extension in the inland waters.

An approved four-year program will provide improved short-to-medium range ship/shore radio communications from a new station at Clyde River and through peripherals remotely controlled over ANIK-derived circuits from Coral Harbour and Resolute coastal stations. With the addition of new facilities, the wide-area ship/shore radio-telephone communication coverage from Frobisher will be improved. On completion of this program, ships sailing Arctic waters will have good communications both to points within the Arctic and to southern points over the communication links provided by CNT in the west and Bell in the east which connect our stations to the telephone and telex networks.

Canadian Surface Transportation Administration

Responsibilities

The Canadian Surface Transportation Administration exists, essentially, to foster the optimum development of the national surface transportation system, and, where required, to provide facilities and services, consistent with safety and the protection of the environment, on a cost-recoverable basis to the maximum extent practicable.

Railway Directorate

Responsibilities

It is responsible for formulating policy proposals and ensuring that the operation, planning and regulation of railways are consistent with national needs and government policy. Further duties involve planning and implementing railway programs consistent with such objectives, providing government with railway information and conducting liaison with industry and provincial governments. The Directorate is also responsible for ensuring that adequate resources are available for continual improvement of the railway system.

Review of 1975-76

The Yukon Railway Study, covering two related areas of interest has been carried out. One analysis involves an assessment of a rail extension north from the present railhead at Whitehorse, while the other analysis will contribute toward the longer range rail development strategy for the entire area. The Study's Steering Group has approved the final report and has prepared a summary report for the Transport Committee of the ACND. While the Yukon Railway Study does not provide recommendations, it does provide a comprehensive data base upon which future railway development strategy can be formulated.

Highway Branch

Responsibilities

The Highway Branch is responsible for developing a methodology for the evaluation of federal and provincial highway programs. The Branch negotiates and manages cost-shared highway programs and studies their inter-relationship with other modes of transportation. The Branch also heads the Interdepartmental Highway Committee whose role is to review proposed highway investments north of 60°N by all departments of the Federal Government. The proposals are reviewed in terms of specific governmental objectives and with reference to supportive studies and analyses.

Review of 1975-76

The main objective of highway development in the Territories is to construct road links to support developmental activities. To this end, the Highway Branch has participated in a number of interdepartmental and intradepartmental discussions on the subject of highway facilities in the North. The Highway Branch has participated in preparing material for discussions which are being held with the USA and British Columbia to establish an agreement for the reconstruction, paving and extension of the Canadian section of the Haines Road and the Alaska Highway from Haines Junction to the Yukon/Alaska border.

In addition, as part of the ongoing program of upgrading the Alaska Highway, phased upgrading of the Highway near Whitehorse and between Fort Nelson and Fort St. John by DPW has been strongly supported by Transport Canada.

The Highway Branch is presently cost-sharing a research program by NRC, south of Inuvik, to examine insulating methods for highway construction on permafrost. The purpose of this study is to determine if polystyrene insulation can be substituted for conventional thick layers of fill which often have to be transported over long distances. Depending on the results, savings in construction costs of northern highways could be substantial.

Motor Carrier Branch

Responsibilities

The Branch is responsible for the development of federal policies affecting the motor carrier industry and participates in strategic planning where it concerns passengers or freight which move extra-provincially on Canada's highway system.

It maintains close contact with its provincial counterparts and liaison with the motor carrier and shipping industries.

Review of 1975-76

The Motor Carrier Branch provided technical input into the Transportation Policy Review, the first phase of which was carried out during 1974 and 1975, and which dealt in part with movements of passengers and freight by motor coach and truck.

The report was instrumental in completion of a Bill concerning the regulation of movements of dangerous goods by motor carriers.

The Motor Carrier Branch participated in several research programs with a view to improving general knowledge of the motor carrier industry. Branch members served on committees concerned with the motor carrier industry or its users.

Planning and Urban Applications Branch

Responsibilities

The development, implementation and monitoring of programs, including participation in policy formulation involving urban transportation and intermodal aspects or elements of transportation not included in other surface transportation programs.

Review of 1975-76

The Branch determined that it was feasible to implement a mini-bus transit system to serve the city of Whitehorse and, with the Transportation Development Agency, received Treasury Board approval to support its development.



CGS Alexander Henry conducting
trials with special air cushion ice breaker
S.L. Iceater-1

Plans for 1976–77

The Territory and city of Whitehorse will cover operating expenses during the two-year trial period during which data, particularly on community impact, will be collected. Service began on February 2, 1976 and is expected to continue until the spring of 1978.

Long-term Plans

The service will continue on a trial basis to 1978 after which the City, Territory, Planning and Urban Applications Branch and sponsoring group will complete an analysis to determine whether it will be continued with territorial and city government support.

Transportation Development Agency

Responsibilities

The Transportation Development Agency (TDA) was designated as a focal point for transportation research and development in Canada "to encourage and promote continuous improvement, innovation, growth or phase-out of modal and intermodal transportation".

Review of 1975–76

Air Cushion Vehicle (ACV) Cargo Handling Demonstration – This program, initiated in late 1974 and jointly sponsored by TDA and the Ministry of Transport of Quebec, was completed during this period. The purpose of the demonstration was to assess the performance of an ACV in transporting cargo to remote areas of the Lower North Shore of the St. Lawrence in Quebec. The objectives were to determine whether ACV's could provide adequate winter service in this environment; whether ACV's were capable of operating under commercial conditions and maintaining a point-to-point operations and in lightering. In addition to investigating technical features and operation in this environment, the economic and social aspects were also studied.

Air Cushion Vehicle (ACV) Icebreaking Capability – Successful tests of Air Cushion Vehicle (ACV) performance as an icebreaking vessel led to the concept of enhancing existing icebreaker capability by use of an air cushion bow platform. A program of trials in laboratory and later on *in situ*, was initiated, in co-operation with Canadian Marine Transportation Administration, to test applicability and performance of such a device mounted on the bow of the icebreaker *Alexander Henry*. Initial trials confirmed viability of the device and indicated increased ship performance and icebreaking capability.

Concurrent with other ACV trials, a second phase of theoretical studies was undertaken to better understand the phenomenon of icebreaking under an air cushion vehicle. The considerations were extended from a slowly moving vehicle to the range of critical velocities at which the icebreaking capabilities of the vehicle seems to be at the optimum. A mathematical model, simulating conditions under a vehicle moving at or near critical velocity was constructed and preliminary testing of its predictive capability was carried out for a certain range of parameters.

Development of a Semi-Empirical Model of Ice Loads on Propellers – A series of tests of ice loads on propellers, carried out in an ice research laboratory, resulted in a mathematical formulation of impact of a variety of ice conditions on the propulsive system. The semi-empirical model, formulated as a result of the tests, is intended as a design tool for application in the current and future propulsion equipment for new icebreaking vessels and for possible modernization of the existing icebreakers in the Canadian Coast Guard's Service.

Arctic Class 2 Icebreaking Cargo Vessel Operational Trials and Assessments – The Federal Government's decision to provide assistance and actively participate in development of an Arctic Class 2 icebreaking cargo vessel opened an opportunity for assessments of performance and strength of such a vessel in actual Arctic operations. TDA jointly with Canadian Marine Transportation Administration commenced planning a program of trials; assessments of instrumentation needs being the current priority.

Air Cushion Raft Transport Systems – The program for towed air cushion rafts was revised and extended to permit development, from the basic raft form, of various overland air cushion vehicle transport systems. This program extension was made possible by the development of viable rafts by Canadian Industry from which the designs of various transport systems may be derived. This program has been defined in collaboration with NRC.

Environment Assessment, Voyageur ACV – An environmental test was carried out in 1973 with the Bill Aerospace Canada Voyageur 002 on Richards Island, NWT, with a report issued by TDA in July 1975. The test area was revisited in the summer of 1975 to appraise permanent damage. The DOE survey crew who carried out the evaluation for TDA reports that while, with some care, traces of passage could still be observed, no damage as such could be evinced.

Ice Breaking Bow Form Evaluation – The Canadian Coast Guard has requested an evaluation of the new bow form fitted to CCGS *Wolfe*, as this form is proposed for the intended Polar icebreaker. A quantitative evaluation is being carried out by TDA in collaboration with the CCG; the test data to be compared with that of CCGS *Wolfe* in its original configuration.

UHF Ice Thickness Measurements – This project attempts to measure sea ice thickness with high frequency radiometry passive remote sensors. While actual measurements appear difficult, identification of ice type appears possible.

Plans for 1976–77

Future research plans will include projects related to icebreaking capability of air cushion vehicles. Specifically, the ACV bow platform program evaluations and assessments of 1975–76 trials will be carried out and consideration will be given to initiation of the second phase of the program which includes trials and assessments of the performance of an ACV platform attached to a conventional vessel. Theoretical studies of icebreaking mechanisms under air cushion vehicles will

continue and will be directed towards establishing criteria for design of air cushion vehicles specifically for the task of icebreaking. TDA intends also to participate in and/or undertake ice research studies directly related to transportation in ice-covered waters. The Arctic Class 2 vessel trials project will be carried into the stage of advance procurement of instrumentation needed for assessments of performance in ice-covered waters.

Further development of systems dynamics and components for air cushion lift systems is planned. The environmental impact of air cushion vehicles and lifts will be studied jointly with Environment Canada.

It is expected that the transportation costing model derived during the study, transportation of Oil and Gas from the Arctic Islands (1974-75), will be updated to include the latest available data. The model will also be used in more comprehensive studies of transportation of oil and gas from specific locations in the Arctic-southward.

Long-term Plans

To promote studies, experiments and demonstrations, through its own funds and specialist staff and through co-operation with other government agencies, municipalities and commercial enterprises.

Unemployment Insurance Commission (UIC)

Responsibilities

The mandate of the UIC includes accepting and processing claims from residents of northern Canada, as well as the payment of benefit to those who fulfill the conditions of entitlement.

The District Office in Whitehorse serves the Yukon Territory except for the hearing of appeals of the Board of Referees. The Whitehorse appeals are dealt with by the Board of Referees located in Prince George, BC. However, where it is important in the appeal hearing that the appellant be in attendance, his or her expenses are paid to Prince George.

The Edmonton Office serves the districts of Mackenzie and Franklin, excluding Baffin Island. The District Offices in Winnipeg and Montreal East serve the districts of Keewatin and Baffin Island respectively.

Review of 1975-76

Despite the 10 per cent increase from 6,014 to 6,625 in claims received, the existing offices provided a speedy and personalized service to the people of their communities.

Yukon Territory

The Whitehorse office retains claimants' files for easy reference and prompt adjudication, and provides information to claimants on their rights and obligations. It consists of an officer-in-charge, three insurance agents and two clerks. Supplementary personnel is added at times of heavy claim-load. During 1975, the office processed 4,253 claims. The population of the Yukon Territory is approximately 23,490.

After settling into their new, downtown location, the Whitehorse office continued to provide excellent service to unemployed persons in the Yukon. The liaison between UIC and the local Canada Manpower Centre (CMC) was greatly improved. The close teamwork of these two offices provides a unified service to claimants, to assist them in finding work as soon as possible.

The UIC has representatives on the joint federal and territorial government Manpower Needs Committee, which evaluates training and manpower requirements for the area.

District of Mackenzie

This district is served by an enquiries officer in Yellowknife and by a UIC-trained Canada Manpower clerk in Inuvik (both major centres). The Edmonton district office, which is responsible for this part of Canada, has identified all the claims from these areas in one special unit.

Plans to improve our communication system include providing all settlements with UIC application kits, on which will be stamped the Yellowknife UIC address. The UIC officer in Yellowknife will ensure that all the necessary information is included with the application before sending it on to Edmonton.

As of January 7, 1976, the District of Mackenzie has a population of 27,808 and a labour force of 21,551. As of January 31, 1976, 853 persons were on claim.

District of Keewatin

All claims originating from the District of Keewatin are dealt with by one unit in Winnipeg. The unit is working very well. UIC personnel have familiarized themselves with problems of communication in northern areas. When necessary, liaison with area social workers is carried on by telephone and by mail to give or obtain information.

As of January 7, 1976, the District of Keewatin had a population of 3,403 and a labour force of 594. As of January 31, 1976, 97 persons were on claim.

District of Franklin - Baffin Island

The District of Franklin has a population of 7,747 according to the last census taken in 1971. During 1975, there were 360 persons on claim.

The officer responsible for UIC in Frobisher on Baffin Island gives advice and guidance to claimants completing applications for benefit. Baffin Island is part of the District of Franklin and is administered, for unemployment insurance purposes, from the Commission's Montreal East office.

Plans for 1976-77

As the existing service is adequate in these northern communities, there are no immediate plans for expansion.

Long-term Plans

The Commission's long-term plans are to increase contact with the Territorial Governments and settlement agents in order to improve UIC services in northern Canada should the need arise.

Government of
the Northwest
Territories

Government of the Northwest Territories (GNWT)

Responsibilities

To exercise government jurisdiction within the Northwest Territories, exclusive of control over natural resources (except game, which is a territorial resource).

Review of 1975–76

The following material has been taken, for the most part, from the 1975 Annual Report of the Government of the Northwest Territories, *Government in Transition*. The material is based on the calendar year, 1975, rather than the fiscal year, 1975–76, as is the case elsewhere in the publication.

Council of the Northwest Territories

In April 1974 the Parliament of Canada passed amendments to the Northwest Territories Act concerning, among other matters, the composition of the Territorial Council and, to some extent, its method of operation. To replace the then existing Council of 10 elected and four appointed members provision was made for a fully elected 15 member Council. Provision was also made for the election by Council Members from their own number of a Speaker to preside over Council Sessions. The Commissioner of the Northwest Territories had presided over all previous sessions of the Council since 1905.

As a parallel step, the Minister of Indian Affairs and Northern Development instructed the Commissioner to establish a five-member Executive Committee following the 1975 election. This committee was to be composed of three appointed officials and two Members of Council recommended by their colleagues and appointed by the Commissioner.

In 1975, Council sessions were held in January, May, June, and September.

54th Session

Commissioner S. M. Hodgson on January 10, 1975 declared open the final session in the term of the Seventh Council of the Northwest Territories. The Honourable Judd Buchanan, P.C., M.P., Minister of Indian Affairs and Northern Development, was among the honoured guests attending the opening.

At this session the administration introduced for Council's consideration 11 bills. In addition, during the course of the session, two private members bills relating to the formation of a Science Advisory Council and to the Petroleum Products Tax were also introduced.

As is customary at winter sessions of Council, the most important and time-consuming item was the financial estimates for the fiscal year 1975–76. Following a detailed scrutiny of the policies and programs of the various departments of the Territorial Government, Council approved main estimates in the amount of \$164,201,700. Supplementary estimates for the remainder of the 1974–75 fiscal year in the amount of \$4.6 million were also passed at this Session.

The Nursing Profession Ordinance was enacted by Council to replace the existing Registered Nurses Ordinance. This ordinance provided autonomy to the Northwest Territories Registered Nurses Association by granting to that body the power to review qualifications of applicants for membership and to discipline its members.

The Science Advisory Board Ordinance, a private members bill, which provided for the establishment of a board to advise Council on scientific, engineering and technological resources of the Territories was enacted by Council.

Amendments to the Council Retiring Allowances Ordinance were enacted to bring it into line with the provision of the Canada Income Tax Act.

A private members bill to amend the Petroleum Products Tax Ordinance by removing the tax on domestic heating fuel was defeated.

Authority was granted to the Commissioner to enter into agreements with the Government of Canada concerning the incarceration of prisoners within and outside the Northwest Territories by an amendment to the Corrections Ordinance.

In the financial area, a number of ordinances were passed authorizing the Commissioner to enter into financial agreements with the Government of Canada regarding the development of a townsite at Strathcona Sound, to carry out various housing programs under the provisions of the National Housing Act, to make loans to municipalities for capital purposes, and regarding capital and operating grants provided to the Northwest Territories.

In other business, Council considered and approved amendments to the Rules of Council to permit the operation of Council at future sessions with a Speaker.

Council Elections – On March 10, 1975, the people of the Northwest Territories went to the polls to elect their representatives to the first fully elected Council in the history of the present-day Northwest Territories. Members elected were: George Barnaby, Mackenzie Great Bear; Thomas Butters; Inuvik; Peter Ernerk, Keewatin; Mark Evaluarjuk, Foxe Basin, Ipeelie Kilabuk, Central Baffin; William Lafferty, MacKenzie Liard; William Lyall, Central Arctic; Arnold McCallum, Slave River; Dave Nickerson, Yellowknife North; Bryan Pearson, South Baffin; Ludy Pudluk, High Arctic; David Searle, Yellowknife South; John Steen, Western Arctic; Donald Stewart, Hay River. James Wah-Shee of Yellowknife was acclaimed in the Great Slave Lake electoral district.

55th Session

On May 1, 1975, in Yellowknife, the 55th Session, which was the first session of the eighth Council of the Northwest Territories, was declared open. The principal purpose of this session was to elect presiding officers and to recommend the appointment of two Council Members to the Executive Committee David H. Searle, Q.C. was declared Speaker of the House; Donald M. Stewart, Deputy Speaker;

Thomas H. Butters, Deputy Chairman of Committees. Peter Ernerk and Arnold McCallum were proposed as Executive Committee Members and subsequently appointed by the Commissioner with responsibility for the Departments of Social Development and Education respectively.

The only legislation enacted during this session was an amendment to the Council Ordinance. This bill was introduced to permit Members of Council, appointed as members of the Executive Committee, to continue to be eligible to serve on Council. The bill also provided for the payment of additional indemnities to the Speaker, the Deputy Speaker and the Deputy Chairman of Committees to compensate them for the duties they will have to perform in these roles and above their regular responsibilities as Council Members.

In accordance with the Rules of Council as revised in January 1975, a Special Committee was established at the beginning of this session to develop lists of members for the required Standing and Special Committees.

By adopted motion, Council approved the setting up of Standing Committees on Finance and on Legislation. Experience during the term of the Seventh Council clearly proved the value of these committees as a means to assist Council in the efficient consideration of matters.

During this session, much time was spent explaining the Rules and Procedures of Council to the new members, as many of them had never before been in any close contact with the legislative process. Council also discussed at some length the responsibilities and functions of the two members named to the Executive Committee.

The 55th Session of the Council of the Northwest Territories was prorogued on May 2, 1975, at the conclusion of two sitting days.

56th Session

Speaker of the House, David H. Searle, Q.C. opened the 56th Session of Council on June 9, 1975 at Yellowknife.

In the course of this session, Council considered and passed 10 bills. Of a total of 32 formal motions introduced, 28 were adopted.

The existing Insurance Ordinance was revised to bring it into line with the uniform legislation adopted in the common law provinces. A new development for the Territories contained in the legislation was the introduction of provisions for the licensing of insurance agents and brokers so that greater control can be exercised over the industry, thereby affording more protection to the public.

Council enacted a Municipal Employees Benefits Ordinance to provide a program of retirement, death and disability benefits for municipal employees in the Territories. This program is to be available to municipalities on application to the Territorial Government.

Council, by a private member's bill, amended the Council Ordinance to allow the appointment under certain circumstances of Council Members to boards and commissions.

A Supplementary Appropriations Ordinance for the 1975-76 fiscal year was also passed. Mainly, it authorized the transfer of funds between departments necessitated by reorganization.

The Electrical Protection Ordinance was revised by Council to provide up-to-date legislation reflecting the changes that have taken place in the electrical industry over the past several years.

Up-to-date legislation for the formation and administration of savings and credit unions in the Territories was provided when Council revised the existing Credit Union Ordinance.

The Territorial Hospital Insurance Services Ordinance was amended to increase the size of the Territorial Hospital Insurance Services Board from three to five members to facilitate the board's operation.

By passage of an amendment to the Petroleum Products Ordinance, authority was granted for the operation of self-service retail gasoline outlets in the Territories.

A means to prevent and control outbreaks of equine infectious anemia (swamp fever), was provided for by amendments to the Herd and Fencing Ordinance.

The Judicature Ordinance was amended to permit the appointment of additional judges to the Court of Appeal for the Northwest Territories.

By adopted motion Council recommended to the Minister of Indian Affairs and Northern Development that he appoint W. H. R. Gibney of Pine Point and William Lafferty of Fort Simpson to the Northwest Territories Water Board and that he reconfirm the appointment to that body of J. A. Bergasse of Yellowknife. Similarly, it was recommended to the Minister that Donald M. Stewart of Hay River be appointed to the Board of the Northern Canada Power Commission. These appointments were later made by the Minister.

Council established Standing Committees on Rules and Procedure and on Indemnities and Allowances to continue the ongoing work which was undertaken by these committees. The Indemnities and Allowances Committee's function was expanded to also cover members' services.

A Special Committee on Revenue was also formed to enquire into all matters relating to the public revenue in the Territories. The committee is to review and evaluate any actual or potential sources of Territorial revenue.

The 56th Session was prorogued by Commissioner Hodgson on June 20th after 10 sitting days.

Council Seminar—In a departure from the approach of previous Territorial Councils Members assembled in private from September 22nd to 26th to consider their objectives and to review government policies. Council provided itself with an opportunity for frank and open discussions of these matters with a view to establishing priorities for the guidance of the administration.

57th Session

A special one-day session was held on September 29 to discuss two proposed policy documents. The paper relating to social development was adopted; the other relating to political development was deferred to the January 1976 session.

The social development policy expounds principles relating to social services, education, housing and local government. Council agreed that, in very broad terms, social development programs should encourage self-sufficiency.

It was also agreed that community involvement and control must be emphasized particularly in the areas of local government and the administration of services now performed by the Territorial administration.

The policy document states that home ownership should be encouraged in those areas of the Territories where this is feasible.

In respect to education, Council supported the concept that children should be educated in their home communities. It was also agreed that the administration should continue to decentralize schools and to extend the grade levels in communities as far as possible.

The document also states that emphasis should be placed on the development of day-care centres, adult education, guidance and apprenticeship programs. The development of additional school boards in the Territories should also be encouraged.

The paper on political development proposed that the Government of Canada commit itself in principle to provincial status for each territory when appropriate timing and sound financial arrangements have been negotiated. The document further proposes that the Federal Government continue to manage and develop the natural resources of the North as trustee for northern residents. In addition, the document proposes that Council support a fair and speedy settlement of native and claims recognized that their settlement is a first priority before full provincial status. Noting that the Federal Government is involved in the provision of certain provincial-type services and responsibilities, the document proposes a prompt

transfer of such responsibilities from the Federal Government to the Territorial Government.

Council, by adopted motion, expressed its wish to meet with the Council of the Yukon Territories to discuss matters of mutual concern. By a second motion, Council indicated its desire to visit the State of Alaska to observe conditions there relative to oil and pipeline developments.

A motion was also passed to bring the political development paper back for consideration at a future council session after councillors had consulted with their constituents.

Commonwealth Parliamentary Association

During the final days of the last session of the Seventh Council, members considered and approved by-laws of the recently established Northwest Territories Branch of the Commonwealth Parliamentary Association. This association is a body made up of members of legislatures throughout the Commonwealth united by the pursuit of the positive ideals of parliamentary democracy.

David H. Searle, Q.C., Speaker of the Council, assumed the position of President of the Northwest Territories Branch of this Association, at the time of his election as Speaker.

Deputy Speaker Donald M. Stewart attended the 16th Canadian Regional Conference of the Association held in Saskatchewan from August 24 to 31.

Clerk of the Council

The Clerk of the Council office provides all regular administrative and support services required by the Council of the Northwest Territories during sessions and throughout the year. Similar services are provided to the Standing and Special Committees of Council which meet during sessions and between them.

Services provided during Council Sessions include, the recording, editing, printing and distribution of the official record of the proceedings of council, and the production and distribution of documents considered by council.

The Clerk of the Council is directly responsible to the Commissioner of the Northwest Territories. Recognizing the changes in the organization of the Council, the Commissioner decided that the Clerk and his staff should come under the direction of the Speaker during Council Sessions.

Liaison with the Chief Electoral Officer of Canada, under whose jurisdiction Northwest Territories' elections are conducted, is maintained by this office. In this connection the Clerk of the Council was closely involved in preparations for the 1975 general territorial election.

Mr. Jean Marc Harmel, the Chief Electoral Officer, and one of his senior officials, visited Yellowknife for several days immediately prior to and on polling day to learn firsthand of the special problems associated with elections in the North. Subsequent to the election, the Clerk of the Council and the Clerk Assistant attended a seminar of returning officers convened in Yellowknife by the Chief Electoral Officer.

The Clerk of the Council is also the secretary of the Commissioner's Awards Committee. In this capacity he acts as the administrative arm of the committee. As secretary he also makes all necessary arrangements for the presentation of awards and the associated dinners or receptions.

W. H. Remnant, Clerk of the Council and former president of the Association of Clerks-At-The-Table in Canada, was the host of the seventh annual meeting of this association when it met in Yellowknife from August 20 to 23. Delegates from most of the legislative assemblies in Canada and from the House of Commons attended to discuss professional matters of mutual interest.

For many years a member of the RCMP assigned by his detachment has performed duties of the Sergeant at Arms of the Council of the Northwest Territories. Concurrent with the creation of the office of Speaker, it was agreed that this practice would be discontinued. Instead Mr. F. A. MacKay, an employee of the Territorial Government for several years, has been appointed to serve on a continuing basis as the Sergeant at Arms of the Council.

Department of Economic Development

Government reorganization in 1975 resulted in game management responsibilities being transferred out of the Department of Economic Development, while responsibilities for petroleum resource development as it relates to the Territorial Government, and northern employment were transferred into the Department.

Industry and Commerce Division

The Industry and Commerce Division has project operations, financial assistance, arts and crafts and co-operative development responsibilities. The Division is also engaged in identification, promotion and development of new enterprises. Under investigation are the manufacture of pre-fab housing, snowshoes, toboggans, knockdown furniture, as well as hydroponics and greenhouses utilizing waste heat from power plants.

Project Operations

Commercial fisheries and processing plants, retail stores, laundry, Indian and Eskimo handicrafts, producing centres and retail outlets are examples of the diversified projects managed by the project operations section.

Emphasis is placed on business like operations and the training and development of indigenous people in all facets from production workers to management.

Exciting styles and innovations describe the jewellery designs now being produced in a project in Frobisher. Manufacturing of successful prototypes will begin this year while an all-encompassing training program for indigenous residents is continuing. Patterns for high quality sweaters, now being produced in Frobisher, will soon feature exclusive native design. Both of these projects stress involvement by indigenous people from design to manufacturing to management.



Fresh-frozen and smoked Arctic Char, lake trout and whitefish are well-known as quality products of Rankin Inlet's modern cannery operation. The facility is operated

through the assistance of the Department of Economic Development's project operations section

Parka production with a distinctive northern design has been substantially increased to meet demand from both southern and northern markets. With three major plants located in Inuvik, Baker Lake and Frobisher, styles distinctive to these settlements enhance a product which features a two-part parka design, embroidery, appliques, full fur trim and the popular "delta" braid.

Pack sacks, gun cases and snowmobile covers complement the basic canvas products such as tents and tarps at the Fort McPherson Canvas Project. With the aid of an experienced manager, training of indigenous people and the design of new but functional products has begun.

Need a pound of sugar in Nahanni? A ski-doo in Bay Chimo? A fur garment in Inuvik? These and hundreds of other products are available from one or more retail outlets. Objectives of these centres vary from providing the community with the basic essentials, to emphasizing the potential of the tourist trade.

In those outlets where providing basic essentials is of prime concern, food, clothing, tools, outboard motors and ski-tos are available. Centres which have these basic services otherwise provided have concentrated on purchase and resale of local handicraft products catering to tourists, visiting dignitaries and the local market.

Financial Assistance Section

The Financial Assistance Section administers two direct term loan funds; the Small Business Loan Fund and the Eskimo Loan Fund; one guaranteed loan fund; Great Slave Lake Fisherman's Loan Fund; and plays a support role in processing loan applications to the Indian Economic Development Fund.

The general objective of the funds is to provide loans to prospective business proposals or existing businesses to successfully operate and create meaningful employment. All loan applications are reviewed by independent credit committees.

Eighty-two applications requesting \$1.5 million were reviewed under the Eskimo Loan Fund with 49 loans valued at \$1.4 million being approved. Sixty-four loan applications requesting \$1.5 million were reviewed under the Small Business Loan Fund with 37 loans valued at approximately \$700,000 being approved. Five loan applications requesting approximately \$14,000 were reviewed under the Great Slave Lake Fisherman's Loan Fund with three loans valued at \$3,000 being approved.

Arts & Crafts

In July the Gjoa Haven Handicraft Project was initiated in a renovated NCPD building. A project officer was contracted to train and develop the artistry of the people of Gjoa Haven.

Assistance was provided to private Indian groups by way of technical and management assistance and business development grants for Fort Liard Handicrafts, Jean Marie Handicrafts, Lac La Martre Handicrafts, Fort Providence Handicrafts and Rae Lakes Handicrafts.

Preliminary plans are being carried out to assist projects in Paulatuk, Pelly Bay and Clyde River. In addition, investigations were conducted in Grise Fiord, Resolute and Arctic Bay. Projects are planned for these settlements in the coming fiscal year.

The Chesterfield Inlet sewing project is being re-organized and moved to Turquetil Hall. Although some training will be necessary, a local project manager has been contracted to run the Arts & Crafts shop. The Province of Alberta circulated in that province a selection of wallhangings and artifacts of the Keewatin. An exhibition of the Junior Sculptural Show opened at the Calgary Galleries in February and showings were also presented in Saskatchewan, Ontario and Nova Scotia.

A film "Printmaker" was produced for the Department during the year, showing the printmaking procedures of Pangnirtung. This film will be used to promote graphic sales especially during the official opening of the 1975 Pangnirtung prints.

Co-operative Development

There were 48 incorporated co-operatives in the NWT during the past year of which 43 are considered active. After a period of rapid growth in numbers, the co-operatives are strengthening and consolidating the basis of their operations.

The Canadian Arctic Co-operative Federation Limited, which is owned and controlled by their member co-operatives, is also completing a re-examination of its activities and priorities. It is expected that the Federation will play an increasing role in the provision of necessary services to their members. The Government of the NWT continued to assist with the funding of the Federation by the provision of a \$75,000 operating grant.

One new credit union was incorporated during the year and one inactive association was dissolved. The total number of credit unions remains at four, all considered active.

The North of 60° Savings and Credit Union now has assets of about \$2,000,000. In 1973 assets of this association were about \$50,000.

The Government of the NWT continued to support the development of credit unions by providing the NWT credit union central with a grant of \$40,000.

Petroleum Resource Development Project Group

The Petroleum Resource Development Project Group provides a co-ordination and liaison service to the Departments of the Government of the NWT on matters relating to the Mackenzie Valley Gas Pipeline proposal, the Mackenzie Highway, a possible Arctic Island Gas Pipeline, the Mackenzie Delta Gas Plant proposal, and the recently formed consortium, Beaufort Delta Oil Project Ltd., which is examining the prospects of an oil pipeline, from the Mackenzie Delta and Beaufort Sea, to southern Canada.

The Project Group also has overall management responsibility for the Hire North Project.

In March, the Federal Environmental-Social Program Northern Pipelines finished the program of studies, begun in 1972, on environmental, social and economic aspects of the Mackenzie Valley in relation to the proposed gas pipeline. The Project Group was heavily involved in co-ordinating the studies that the Government of the NWT was conducting under the auspices of this program. Studies covered the basic social, economic and cultural concerns of the Government of the NWT in relation to the proposed Mackenzie Valley Gas Pipeline.

A special report was prepared entitled the "Mackenzie Corridor Development Plan" which was published as part of the Environmental-Social Program series of studies. The report states the objectives of the Territorial Government in relation to pipeline, and highway construction in the Mackenzie Valley.

Over the past four years substantial amounts of natural gas have been discovered in the area of the High Arctic Islands. In anticipation of the possibility of a gas pipeline from the high Arctic to southern Canada, the Environmental-Social Program (Northern, Pipeline) began a series of studies on the social and economic implications of such a construction project. The Project Group was actively involved in co-ordinating the Territorial Government's part of this program.

In late 1974 Beaufort Delta Oil Project Ltd. was formed and in 1975 this consortium began a program of technical, environmental, economic, and sociological studies in preparation for a possible application, in 1978 for the necessary federal permits to construct an oil pipeline from the Beaufort Sea and Mackenzie Delta areas of the NWT, down the Mackenzie Valley, to southern Canada. The Project Group is maintaining close contact with the consortium.

The Hire North Project was established to provide training and employment opportunities on the Mackenzie Highway construction project, for the indigenous people of the area. The prime function is to undertake the right-of-way clearing work for the Mackenzie Highway. The secondary function is to operate a program aimed at training native northern people on heavy duty construction equipment for subsequent employment with contractors constructing the Mackenzie Highway.

During the 1974-75 winter season a further 100 miles of highway right-of-way were cleared. This, coupled with the clearing done in the previous two winter seasons, brought the total miles cleared to 300, stretching from Fort Simpson to Fort Norman. The average work force was approximately 150 people per month over the five month season, in total about 400 individuals obtained work for all or part of the season, mainly native people drawn from communities in the Mackenzie Valley.

In mid-1975, it was announced by the Federal Government, that the Mackenzie Highway was to terminate at Wrigley. Consequently no major highway right-of-way clearing work was undertaken in the 1975-76 winter season. A 15 mile training-construction section was established in 1973 at mile 410, River Between Two Mountains, on the Mackenzie Highway right-of-way. Since that time about 100 native people have been trained on road construction equipment, as a roadbed has been gradually constructed along the 15 mile section. In 1975 the program continued, and the section was extended for a further 15 miles from mile 410 to mile 425. At any one time about 10 trainees are in residence at the training section, and in 1975 about 30 fully trained operators were produced.

Employment Division

The Employment Division has two main functions. A small staff group in Yellowknife provides an inter-departmental co-ordinating role for manpower training and development. A field staff administrators programs which are designed to meet labour force needs.

Some of the problems being dealt with include disproportionate levels of unemployment and under-employment between different ethnic groups and different regions throughout the Territories, and the problems of many people adjusting to wage economy opportunities.

Several programs have been mounted to come to grips with employment problems.

Over 40 positions have been established in Internal Middle Management Training to provide on-the-job training and career development for Northerners in the Government of the NWT. This program represents an alternative to the normal entry qualifications and experience requirements are geared to individual needs. Community controlled employment offices were operating in 17 communities by the end of 1975. Twelve of these were direct sponsored through Government of the NWT grants and the remaining five received operating funds through the Department of Manpower and Immigration's Outreach Program. During 1975, several hundred persons were placed in jobs through these community agencies.

During 1974-75, Territorial Government job mobility grants made it possible for 49 persons to take advantage of short-term employment opportunities which might not have otherwise been available. To assist northerners find permanent employment, training-on-the-job contracts for 46 persons working with 37 employers were written in 1974-75.

Apprenticeship continues to be the most effective program for the development of skilled tradesmen. Manual skills are learned on the job, with close supervision by Department of Economic Development staff to ensure that the apprentice is receiving work experience in all available trade practice. In addition to this on-the-job training, each indentured apprentice attends six to eight weeks of full-time trade theory in school situation during each year of his apprenticeship. The majority of apprenticeships are four years in length. The apprentice learns skills both on the job and in school and is able to be continuously employed while in a training situation. There are 283 apprentices working across the Northwest Territories.

Tourism Division

Factors such as the increased cost of fuel, resultant inflation and related recession have undoubtedly created changes in the tourism industry. There has been evidence in Canada wide travel statistics of significant changes in travel patterns, notably in the decline in automobile tourism and increases in air traffic.

Expansion of the tourism plant and a greater involvement by northern residents in the tourist industry continue to be priority development objectives of the Tourism Division.

Greater emphasis is being placed upon promotional activities of a type which tend to favour mass transportation modes and to attract tours.

A start has been made to develop a Territorial parks system. A territorial Parks Committee was formed and preliminary work has begun.

Hotel construction or operation is underway at Sachs Harbour, Broughton Island and Igloolik, all by individual entrepreneurs. Similarly, hotel activity proceeded at Cambridge Bay, Pond Inlet, Coral Harbour, Eskimo Point and Sanikiluaq by efforts of co-operatives.

Development Grants (\$60,000) and Promotional Grants (\$10,000) were made in 1975 to assist the above hotels and to aid community tourist activity in general.

In 1975, new or additional campground facilities were completed at Prelude Lake, Reid Lake, Pangnirtung, Pine Point, Coppermine and Whittaker Falls, in addition to tourist boat launch facilities at Inuvik and Fort Smith.

In September, 1975, the Tourism Division hosted the Federal-Provincial Parks Conference. Delegates attended from all jurisdictions.

There was an upsurge in inquiries and proposals related to sports fishing lodges. Final statistics showed that in 1974 about 19,000 tourists spent about \$6,500,000. Preliminary evidence would indicate an increase in tourist activity for 1975.

A Convention Bureau was established in 1975 with TravelArctic participation. Several small conventions or conferences were held in Yellowknife and elsewhere. Increased attention is being given the canoeing tourist. This activity is gaining in popularity.

Research and Evaluation Division

The Research and Evaluation Division provides economic research services within the government and to other organizations and individuals in the private sector.

A number of studies related to forestry were completed. An overview study of the NWT forestry sector was undertaken by a consultant to identify needs for governmental support in the sector over the next five years. The feasibility of a poleyard-sawmill complex in the Mackenzie-Liard area was studied, as a possible spinoff from proposed pipeline development. Two sets of experimental knock-down furniture were designed and built to test the use of local spruce in furniture construction and to make use of plywood as a building material especially in remote areas.

Department of Education

1975 was a year of considerable change in northern education. Pressure from local advisory committees, and from individual parents, resulted in a tightening of curriculum requirements. More attention is now being given to basic school subjects.

Orthographies in the main Indian languages of the Mackenzie District have been produced, and meaningful, culturally-relevant material using these orthographies is now being prepared for both school and adult education.

Curriculum guides have been produced, with the assistance of teachers and local people, in all basic school subjects, and further work has begun to write structured programs for adult education.

Of significance was the appointment of an elected member of the NWT Council, Mr. Arnold McCallum, formerly a high school principal in Fort Smith, as executive member responsible for education.

For the first time in the history of the NWT the National Student Debating Seminar, involving students selected on merit from all parts of Canada took place in Yellowknife and other NWT communities. The theme of the seminar held in May

was "Development of the North: A Choice of Futures". Over 100 students from north and south of the 60th parallel ably presented the pros and cons on relevant topics. Prominent people from the community and elsewhere acted as consultants, critics and judges.

1975 saw a further decentralization of the budgeting procedures: formula financing became widespread. Principals, through their superintendents, now have some degree of autonomy in budget control, which they share with local advisory committees. Budget restrictions made it almost impossible to introduce new programs. While teacher/pupil ratios were equalized in all schools, a number of administrative staff positions were either deleted from the establishment or left unfilled.

In the design of new school buildings, the core concept of building schools for kindergarten through grade nine has been studied. The application of this concept makes it economically possible to add or to subtract classrooms without altering the main structure of the building. The adoption of this concept may result in greater economy and higher efficiency in our school building program.

During 1975, the Department of Education relinquished its responsibility for apprenticeship training, a major section of the Continuing and Special Education program, which was transferred to the Department of Economic Development. The Department is also turning over to the Department of Social Development its responsibility for the Vocational Rehabilitation of Disabled Persons.

Further effort was made to integrate the total education program from kindergarten to the adult level. There has been more emphasis on delegating to the superintendents in the field the responsibility for all education programs in each community.

Another innovation in 1975 is the increased emphasis on language programs in French as a second, or third language. A substantial grant from the Secretary of State made it possible for all the larger schools to purchase instructional material to improve the teaching of French at all levels.

Enrollment

The enrollment of pupils from kindergarten to senior matriculation grew from a total of 12,504 in 1974 to a total of 13,794 in 1975, an increase of 10.3 per cent. Participation in adult programs, including Basic Training for Skill Development, Basic Job Readiness Training, Basic Adult Education, Home Management and night school classes, also increased from a total of 2,265 in 1974 to a total of 2,602 in 1975, an increase of 14.4 per cent. The most significant increase occurred in home management programs, where the number of ladies participating almost tripled from 150 in 1974 to 415 in 1975.

School Construction

Construction projects initiated in 1974 at the Chief Julius Elementary School in Fort McPherson and at the Sir John Franklin High School in Yellowknife were carried forward in 1975 and will be completed during 1976. Both are additions to existing facilities and have been designed to meet the need for space due to increasing enrollments.

Two major fires in 1974 led to reappraisals of the student hostel programs at Fort Smith and at Cambridge Bay. The fire-damaged portion of Breynat Hall has been converted to a senior student hostel for AVTC students and instructional space for the Teacher Education Program in Fort Smith. New hostel facilities were erected in Cambridge Bay to replace a unit destroyed by fire, and a unit which was written off due to obsolescence.

Design work and site preparation has been completed for construction of a new elementary school in Gjoa Haven. The balance of construction will be completed with occupancy planned for the beginning of the 1976-77 school term. The new school will contain four classrooms, library resource area, technology area and gymnasium, providing facilities for five additional pre-fabricated classrooms in the community.

Preliminary studies have been carried out for a new addition to the elementary school in Cape Dorset.

School Services

A review of service contracts for school busing, food services and custodial services has been undertaken to bring the scope of these services into conformity with existing policy and to compare the costs of the services to those provided by the Department with permanent staff.

Additional training programs have been offered to many of our school custodians. It has been found that the most successful training occurs when the training supervisor is able to work with the custodian on an individual basis in his own school.

The costs of purchasing and shipping furnishings and equipment has risen sharply during the past year. The Department has exercised more control in the purchasing of these items to ensure an equitable distribution to all the schools in the Northwest Territories.

Teaching Staff

With the levelling off of pupil enrollment, there has been no significant expansion of the teaching staff. Although to date only a small percentage of teachers are graduates of the NWT Teachers Education Program, this number will increase significantly in the coming years. There are 15 students presently enrolled in the first year of the program and 22 in second year. When these students graduate, there will be a marked change in the racial character of the teaching staff.

The Department continues to be able to attract highly-qualified teachers from southern Canada in addition to those trained in the NWT. This high quality is made possible by the great interest in our system exhibited by southern teachers. Over 2,000 enquiries were received from teachers interested in a northern posting. From these approximately 150 teaching positions were filled.

Professional Improvement

In 1975 the Professional Improvement Committee, composed of representatives of the Northwest Territories Teachers' Association and of the Department of Education, approved grants of up to \$600 to 92 teachers to attend summer schools for teachers in Canadian universities. This represents 15.3 per cent of the teaching staff in northern schools. The Professional Improvement Fund for 1975 was \$169,100.

Program Development

A major emphasis in 1975 has been placed on providing more specific guidance in language and mathematics programs for grades one to nine to supplement earlier handbooks: *Elementary Education in the Northwest Territories* and *Learning in the Middle Years*.

The language policy of the Department of Education requires that learning materials in the native languages be provided for the primary grades. Reading material has been produced in the Inuktitut (Eskimo) and Slave languages. A major accomplishment this year was the production of a complete primary program for teaching Inuktitut done by classroom assistants and teachers at Spence Bay.

Eskimo Language School

During 1975 Inuktitut Learning Services gave intensive courses in Coppermine and Frobisher and published a revised Phase Two of the Inuktitut course. Staff members have also participated in curriculum and in-service workshops, in the fields of teaching Inuktitut as a first or second language, and of teaching English as a second language. They assisted in training courses for the NWT interpreter course and, in a joint project with the Federal Government, in the development of a rationalized syllabics typewriter keyboard. The staff also participated in the workings of the Language Commission set up by Inuit Tapirisat of Canada.

Educational Resource Centre

The Educational Resource Centre continued to acquire, produce and distribute to the schools a variety of audio-visual materials. The greatest demand was placed on the 16mm film loan service and further efforts were made to expand and improve this service. Those communities not yet receiving the CBC television signal continued to express the need for some type of video tape service. Only a limited response was possible to these requests.

Continuing and Special Education

Programs in education except those reserved for children of normal school-age, are the responsibility of the Division of Continuing and Special Education. This includes a variety of adult education programs, business education, community development, housing maintenance, the education of handicapped children, training for the tourist industry, home management, nursing, training courses relating to prospecting, teacher education and a wide program in vocational education. The division is also responsible for all individuals attending higher education institutions and technical and vocational institutions in southern Canada.

Community Adult Programs

Full-time community adult educators are responsible for programs in 26 communities in the Northwest Territories. Although the major concern is the improvement of basic literacy, other important programs include the development of life skills, basic job readiness training, small business management, leadership training and community development.

Educational programs in home management are yet another responsibility of the Superintendents of Education. Local leaders and native home management specialists are receiving training under professional home management consultants in the Baffin and Keewatin Regions and in the Yellowknife and Fort Simpson Areas. Headquarters is continuing to provide support services to the Superintendents with particular emphasis in 1975 on family nutrition. Other programs include child care, home decorating, cooking and sewing, and family planning.

For both adult education and home management, the importance of developing training programs for natives in this important field of education was a priority in 1975. By 1976 it is anticipated that at least 5 trainees will be receiving extensive training in the field and in training institutions, preparing to assume full-time positions in adult education and home management.

Business Education

At the settlements, and at the Adult Vocational Training Centre in Fort Smith, courses for clerk-typists continue to supply trainee personnel for business, industry and government service. As the demand continues, with the ever-increasing expansion of services in the Territories, business education courses will be offered in more communities. For the immediate future, the greatest demand is in the Mackenzie Delta, where clerical training programs are developing rapidly with support services being provided from Fort Smith.

Small business management courses are being provided on demand from the Superintendents of Education in more settlements, and the expansion in general business activity in the North is reflected in the increasing demand for courses for registered industrial-accountants.

The tourist industry in the North appears to be expanding vigorously, and this has been reflected in a small, but steady, increase in the demand for training in food services and for tourist guides. The Department of Education, with the co-operation of the tourist industry, is completing in 1975 a detailed study of training requirements for employment in the industry.

Paramedical Education Programs

Programs to train paraprofessionals to provide medical services in the North have developed to a high standard of proficiency and excellence. At Fort Smith, the Dental Therapist course, offered under the aegis of the Department of National Health and Welfare, continues to supply trained dental therapists for service in northern communities. As well, the training program for Certified Nurses Aides at Fort Smith is providing annually two classes of well-trained paraprofessionals, with twelve in each class.

Housing Maintenance Programs

From small beginnings, a training program to provide basic instruction in housing maintenance to the native population in remote northern settlements has developed into a full-time program, now concentrated at Fort Smith and Frobisher. Selection of candidates and centralization of training has brought economy and efficiency to the program. From its incep-

tion as an instruction program for basic oil burner maintenance, the housing maintenance program now also offers instruction in painting and decorating, home carpentry, basic home electricity, plumbing, dry-wall construction and home insulation.

Vocational Education Programs

Training for employment in the North is a large-scale program involving the closest co-operation between the federal Department of Manpower and Immigration, the Employment Division of the Department of Economic Development and the Department of Education. Part of the program is provided in an institutional setting, at the Adult Vocational Training Centre in Fort Smith, where continuous courses are provided in welding, carpentry, heavy-duty mechanics, heavy-duty equipment operation, electronics and telecommunications. Short, specialized courses are provided, on demand, for training in airport maintenance, housing maintenance and a variety of other skills.

An increasingly large part of the program is offered in local settlements as required by the Superintendents of Education. Other vocational training programs, those not available in the North, are attended by individuals sponsored by the Department of Education in southern vocational training institutions.

Student Residences

The continuing policy of the Department of Education to extend schooling in smaller settlements, has resulted in a large reduction in the number of pupils accommodated in hostels and residences as indicated in the chart below.

Enrollment of Pupils in all Residences in the NWT

| (Year) | (Number of pupils) |
|--------|--------------------|
| 1970 | 1,180 |
| 1972 | 1,099 |
| 1974 | 649 |
| 1975 | 563 |

Because of declining pupil enrollments in residence in 1975, Breynat Hall in Fort Smith was transferred to the Adult Vocational Training Centre to be used as an adult residence, and Stringer Hall in Inuvik was closed until it is required, with an expected increase in enrollment in a few years at the high school level. At Fort Simpson, the residence at Bompas Hall, operated by the Koe Go Cho Society, was moved into Lapointe Hall so that the Bompas Hall facilities could be used for a school expansion.

Student Travel and Exchange Programs
During 1975, students from all parts of the Northwest Territories participated in a wide variety of travel and exchange programs, including Interchange on Canadian Studies held in Winnipeg, Manitoba, and the Young Voyageurs Program, which included students from two high schools in the North. St. Patrick's High School in Yellowknife was host to Crystal Springs High School in Saskatchewan in December 1974, and visited their exchange school in May 1975. Samuel Hearne High School in Inuvik had an exchange with students from Sheet Harbour High School in Nova Scotia, about as far apart as it is possible for any two schools to be in Canada.

There was also an exchange between students from the Eastern Arctic attending the Ukkivik Residence in Frobisher with students from the Western Arctic attending Akaitcho Hall in Yellowknife.

Department of Finance (Formerly Department of Administration)

Finance and Office Services

The Finance and Office Services Division is responsible for processing and recording all of the financial transactions of the Government of the Northwest Territories, for general communications, and for the central filing service.

The financial section is responsible for the design and implementation of all financial control systems within all Government departments, the preparation and distribution of monthly management reports through the use of the computer, and the financial management of the Consolidated Revenue Fund, including cash flow analysis and forecasting.

The Division is also responsible for the preparation and submission of all claims for recoveries under the terms of cost-sharing agreements with the Federal Government, and for the monitoring and enforcement of all taxation legislation enacted by the Council. This responsibility includes follow-up of unpaid amounts outstanding and the co-ordination of activities with affected program departments to ensure the maximum revenue collection for the Government.

The volume of work processed by the Financial Operations Division is reflected in a comparison of the annual Government budgets for the past six fiscal years and the projected new year:

| | |
|---------------------|---------------|
| 1969-70 | \$ 40,986,000 |
| 1970-71 | 72,237,000 |
| 1971-72 | 90,957,000 |
| 1972-73 | 111,652,000 |
| 1973-74 | 128,456,000 |
| 1974-75 | 139,466,447 |
| 1975-76 (estimated) | 168,894,400 |

Systems and Computer Services

The Systems and Computer Services Division carries out analysis of management systems, preparation of forms and manuals, design and writing of computer processing systems, and operation of electronic data processing equipment.

The management services group have completed a major study for the Health Care Plan, reviewing legislative and policy background, making recommendations for managerial and program changes, writing administrative and procedural manuals, and designing appropriate forms. Smaller management studies have been done for other departments. Working with the Department of Planning and Program Evaluation, the manuals writer is developing a comprehensive book of government objectives and policies.

The systems and programming group have continued to maintain and improve computer systems for health care, social assistance, fuel billing, property management and financial management (payroll, accounts payable, accounts receivable and general ledger). An entirely new payroll system was installed and operating January 1, 1975. Significant moves have been made to change the emphasis of data processing from purely financial systems to management information systems, providing better service to managers in all areas. The plans for decentralized computer input terminals have been postponed because of financial constraints.

In December 1974, a new IBM System 370 Model 125 computer was received and installed. This machine is now fully operational. Training programs for staff in computer operations have been continued.

Supply Services

The Supply Services Division is responsible for the purchasing, transportation, warehousing, and disposal of materials and equipment for all departments of the Territorial Government.

The purchasing section provides an effective, centralized procurement service for obtaining required materials and supplies at minimum cost through the application of professional purchasing techniques. This section also offers technical expertise by providing information on market conditions, product availability, and the development of acceptable specifications aimed toward standardization of a broad range of parts and materials. Twenty-seven per cent of government requirements were purchased from northern firms during the fiscal year.

The warehousing section operates warehouses and supply service centres at strategic locations in the Territories on a "revolving fund" system in order to maintain stores inventories for all departments. Construction of a new warehouse at Yellowknife will begin early in 1976. This improvement will increase the efficiency of managing government material at headquarters. In the interest of community development, northern residents are granted first right to refusal on disposal of a surplus Government equipment.

The petroleum, oil, lubricants section (P.O.L.), maintains a program for the acquisition, control and distribution of bulk petroleum products at all communities where commercial distributors find it uneconomical to operate. Local residents through community organizations are trained in product distribution, safety standards, oil spill clean-up operations, and tank farm operation. Thirty-four tank farms are involved with a total storage capacity of nine million gallons of heating fuel and 1.5 million gallons of automotive gasoline.

A \$16,000,000 five year program to upgrade tank farms and increase storage capacity by 5,000,000 gallons has been approved by the Treasury Board which will keep prices of petroleum products to northern residents at a minimum. The control of the supply of bulk petroleum products has been extended to include the management of a \$6,000,000 budget for heating services to government buildings and to include aviation fuels as well as bulk gasoline for use by the private sector.

The transportation section is responsible for the movement of Government personnel, goods, and material from the south and within the Northwest Territories by operation of an east/west passenger air service, co-ordinating all government charter aircraft movements, co-ordinating the Transport Canada sealift and the Northern Transportation Company barge activities. Particular emphasis is placed on employing local people to discharge the vessels and move cargo within the communities.

Cargo consolidation operations have been established at three major Southern resupply marshalling points enabling volume cargo consolidation discounts to the Government as well as northern residents.

Liquor Control System and Liquor Licensing Board

The Liquor System is responsible for the purchase, warehousing, and sale of all domestic and imported liquor to the public, both through government owned liquor stores and commissioned agencies. In addition, the System provides the office support staff for the administrative functions of the Liquor Licensing Board.

Receipts from liquor sales for the 1974-75 fiscal year were approximately \$9,575,000 as compared to \$8,750,000 for 1973-74. The increase was not as great as in the previous year, only nine per cent as compared to 17 per cent. A retail price increase averaging 16 per cent was implemented in January 1975. Consumer reaction resulted in sales for the last quarter of the fiscal year being down. The increase was necessitated by continuing increases in FOB prices from the various suppliers.

The policy of promoting the use of lower alcohol content products was continued. Various wines of greater than 13 per cent alcohol by volume were delisted and other brands of less than 13 per cent put in their place.

The Liquor Licensing Board, in the first eight months of 1975, held 11 board meetings and one public hearing.

The Board approved two new licences and two transfers, and renewed 124 existing licences in 1975.

The inspection branch continued to supervise and report on licensed premises, resulting in two temporary suspensions and a curtailment of licensed hours, sanctioned by the Board.

Department of Information

With the focus of attention on the North during the past year, there has been increasing demand on the services of the Department of Information.

Although the Department continued to respond to a growing volume of southern enquiries, it kept as first priority the information needs of northern residents.

The Interpreter, a 16-page tabloid newspaper, replaced the Department's two separate newsletters Goinsiday and Tukisivihsat. The monthly newspaper, printed in both English and Eskimo syllabics, has a circulation of 10,000 copies in the North.

The publication is aimed at informing native residents on government programs, services and activities. Plans are to increase the number of pages to 32 by the end of this year.

While worthwhile, the Goinsiday and Tukisivihsat newsletter went to two different audiences. The Interpreter allows readers throughout the Territories to share in information from all regions.

Interpreter-Translator Corps

Assisting in the production of the newspapers, is the Department's Interpreter-Translator Corps. The corps, a group of 15 native language specialists, is unique in North America. Their work is playing a large part in attempting to overcome the confusion and misunderstandings that can occur in a multi-language territory.

Following a five-month training program and an additional specialized course of a short duration, members provided simultaneous interpreting in the Eskimo language for a session of the Northwest Territories Council. The need for such a service, which had never been tried before, arose following the last Territorial election that placed nine native members on the 15-seat council.

The simultaneous interpreting worked well and is now being used for all sessions of council, its committee meetings and during the various conferences.

Demand for the Department's interpreter-translators is heavy, especially on the Eskimo-English language side.

Working out of five centres in the Territories, the interpreters provide both verbal and written translations for government and, when time permits, other organizations.

During work shop sessions, the interpreters developed a bank of over 450 definitions of English words that have no Eskimo language equivalent. The definitions have been published and circulated in dictionary-format.

The interpreters, along with Territorial language specialist Mick Mallon, have also been involved in the development of a standardized syllabic typewriter keyboard.

Public Affairs

In order to be in a better position to respond and to prepare information material, the department established a newsroom approach within the Public Affairs Division. The news centre is staffed by officers with background in all areas of mass communication, including the broadcast, newspaper, film, photographic and audio visual media.

News releases play an important role in informing northern residents of government activities. The releases are distributed on a daily basis over the Department's telex network to the working press. Including coverage of Northwest Territories' Council sessions, over 300 releases were distributed in the past year.

The development of 10 additional community radio broadcasting stations since 1973 has expanded the northern communications network. The community-owned stations, some tied to the Canadian Broadcasting Corporation's regional network, provide additional outlets for information programming.

The Department produced a nine-part series on northern nutrition, in English and Eskimo, in conjunction with the Yellowknife Branch of the Consumers' Association of Canada. The series was distributed to all community stations. With the hiring of a new Chief of Public Affairs, with six years experience in the radio broadcasting field, the Department plans to accelerate its programming efforts.

The newsroom also provides complete photographic facilities, in both black and white and colour, for the Government and responds to an average of 500 written enquiries each month. Its photographic library includes some 5,000 slides, negatives and transparencies.

Publications and Production Division

The Publications and Production Division, continues to concentrate on the production of books, pamphlets, periodicals, reports and provision of a centralized service for the design, printing and advertising needs of the Government.

In its hard-covered format, the Annual Report has established itself as one of a few reference books on the North collected by libraries, arctic institutes, businesses and the general public. It is retail in both northern and southern bookstores. There is also a complimentary distribution to all libraries, schools and community councils in the North.

During 1975, the publishing of *Arctic In Colour* magazine was turned over to Northern News Services of Yellowknife. The four-colour magazine was established by the Department in 1972 with the intention to place it in the hands of a private publisher once it demonstrated strong potential to become viable.

Arctic In Colour's editorial format of introducing its readers to all aspects of life in the Northwest Territories continues.

Total information packages on various government programs, involving the staff of both the public affairs and publication divisions, are beginning to play a large part in the Department's approach to informing the public.

The packages, based on a single then include press releases, posters, radio programming, newspaper and television advertising, pamphlets and on occasion video tape and film.

Initial thrusts in this area have been centred on the topics of the Northwest Territories Council, Consumer Affairs, Home Management and projects sponsored by the Department of Economic Development. The Publications and Production Division also co-ordinated the placement of 52 display ads in northern newspapers during 1975. A similar program is planned for this year.

As well as operating its own print shop the division continued to emphasize its policy of placing government printing with private enterprise whenever possible.

Administration

Administratively, the Department reorganized its structure with the appointment of an assistant director with a responsibility to co-ordinate divisional activities, oversee office management and act as comptroller.

Department of Local Government

1975 saw the reorganization of the Department of Local Government to make the department more effective in carrying out its primary responsibility, which is to facilitate political development at the local level. The recreation, emergency measures, employment, and library services divisions were transferred to other departments. This left research & development, town planning & lands, and municipal affairs divisions with the Department of Local Government, supplemented with a finance & administration group.

Research & Development

The paper on the philosophy of Local Government was presented to the Territorial Council, who plan to discuss it at their January 1976 session. This paper was a major undertaking of the Department in 1974 and was produced at the request of the Territorial Council at their January 1974 session.

Rankin Inlet and Pond Inlet became hamlets in 1975 while four other communities; Igloodik, Arctic Bay, Sanikiluaq, and Whale Cove petitioned for Hamlet status and reviews are underway for their possible incorporation in 1976.

Regional Council Conferences were held in Coral Harbour (Keewatin), Pond Inlet (Baffin) and Cambridge Bay (Arctic Coast). These conferences have proved to be meaningful vehicles for local settlements and hamlet councils to come together to share common concerns and find support to common goals.

Settlement Secretary workshops were held in Rankin Inlet for community representatives from the arctic coast. Keewatin and Baffin; and at Fort Good Hope for the Fort Smith and Inuvik Regions. These workshops further defined the training needs and the rapidly-evolving responsibilities of those in the position of Settlement Secretary.

A training manual is now being drafted that will attempt to tailor future training programs to meet the needs of local councils at all levels, which will include the continued implementation of regional and inter-regional workshops, on-the-job training, and university and privately-sponsored training events. Attention was given to ensure that equal emphasis is placed on both the administrative and developmental aspects of the work.

Other conferences and workshops dealing with more specific requests were carried out. These included community education programs dealing with the increased responsibility to be assumed by a community approaching hamlet status; group dynamics and negotiating strategies useful when local councils are dealing as a group with governments and industry; and workshops exploring the various community development models that may be applicable to communities in their progressive stages of self-determination and growth.

The research section was deeply involved in the evaluation and amendment of existing policies and in the working out of new policy ideas. The hamlet policy, equipment policy, the district service concept, experimental research into progressive sanitation disposal equipment, and the new northern airports program were some of the chief preoccupations.

Municipal Affairs

During 1975, the Municipal Affairs Division was expanded by the addition of a guidance & inspection section, an airports section, a projects, operation & maintenance management unit and a water & sanitation section.

The purpose of these changes was to meet the demands created by increased activity and growth of municipalities, and to provide for a higher degree of service to communities.

The guidance and inspection section carries out regular inspections of municipal administrative units on behalf of municipal councils and the Government of the Northwest Territories providing guidance, instruction and practical assistance to both elected officials and appointed municipal staff.

In the short period since establishment the activities of this section have increased the level of communication between municipalities and the Government of the Northwest Territories.

An airports section was established to administer a joint Territorial and Federal Government program of community airports construction, up-grading and operations and maintenance.

A policy for aviation facilities in the Territories was approved by Cabinet in January 1974. The objective of the five-year implementation program that is now underway is to provide a regular, reliable level of service to all communities in the Territories. This program involves close co-ordination between the Territorial Government and the Ministry of Transport to determine priorities on airport facilities.

A projects, operations and maintenance section was established to consolidate capital projects and operations and maintenance activities.

Project management encompasses the supervision and financial control of all capital projects initiated by the division while the operations and maintenance section provides ongoing supervision and monitoring of all settlement and hamlet budgets.

During the 1975-76 fiscal year capital projects amounting to \$8,000,000 were initiated throughout the NWT by the Municipal Division. Major road construction work was conducted at Norman Wells, Fort McPherson, Sachs Harbour, Pond Inlet and Rankin Inlet with an additional \$295,000 made available to approximately 40 hamlets and settlements through the NWT for minor site development projects.

The division also purchased \$800,000 worth of mobile equipment which provided 30 hamlets and settlements with major construction and municipal services equipment.

A major portion of the Municipal Division's capital funding went for improved or expanded water and sanitation facilities and major projects included a water and sewer expansion at Inuvik at a cost of just over \$1,000,000. Other projects included the construction of a new water storage reservoir at Eskimo Point at a cost of \$800,000 along with major work being conducted on the utilidor systems at Fro-bisher, Rankin Inlet and Fort McPherson.

Approximately \$6,000,000 was made available to municipalities, hamlets and settlements throughout the NWT in the form of grants and subsidies for various activities including debenture loans, grants in lieu of taxes, and water and sanitation subsidies.

The assessment section carried out assessments in the hamlets of Tuktoyaktuk and Aklavik, and the settlement of Fort Providence for the first time. Reassessments were also completed in the town of Pine Point, the village of Fort Simpson and the settlement of Norman Wells. The section also updated existing assessments in seven other municipalities.

Town Planning and Lands

The Town Planning and Lands Division continued to build a closer working relationship with the various municipal and community councils throughout the NWT.

This consisted largely of acting in a resource and advisory role to councils in the resolution of day-to-day planning problems. It also involved assisting a number of councils in the preparation of general development plans to guide their ongoing growth and change. In consultation with the communities, planning studies were begun for Cambridge Bay, Tuktoyaktuk, Gjoa Haven, Aklavik, Rankin Inlet, and Arctic Bay-Strathcona Sound Area. Other plans, begun in 1974, such as for Fort Norman, Arctic Red River, Norman Wells, Fort Simpson, and Pangnirtung were completed.

The planning section found that the Councils of the communities of the NWT were being forced to contend with increasingly complex development problems. Projects such as water and sewer systems, site improvement schemes, and the preparation of land for development required increasing amounts of each council's time.

In 1975 the division continued to negotiate with the Federal Government for the transfer to the Territorial Government of the administration and control of land in and surrounding communities. The communities of Rankin Inlet, Resolute, Pine Point and Tuktoyaktuk were recently negotiated and when transferred, will bring the total number of communities transferred to 18. With respect to the remaining settlements, the division continues to administer the land on behalf of the Federal Government.

Negotiations are continuing with several of the larger municipalities to enable them to become the sole vendors of properties within their municipal boundaries. This will allow the municipalities to directly control and benefit from the sale or leasing of their land.

An item of special interest was the production and publication of a new and comprehensive Lands Manual. It has proven to be of great assistance to land agents in carrying out their day-to-day work in the communities, and in explaining to the public the land administration in the Territories.

Legal survey work was undertaken at Arctic Red River, Fort Liard, Norman Wells, Fort Simpson, Fort Providence and Hall Beach. As part of the division's ongoing program, aerial photography and mapping for planning and engineering purposes was carried out for some 20 sites.

It was found that community councils, particularly in the Mackenzie Valley, have become reluctant to make planning and lands matters a priority out of a concern that such decisions might have an adverse effect on the outcome of the forthcoming land claims negotiations.

Department of Natural and Cultural Affairs

The Department of Natural and Cultural Affairs was formed early in 1975 as part of a general reorganization of the administration of the Government of the Northwest Territories. Functions relating primarily to the culture and traditional way of life of northern people were brought together in the Department. Included are the operation of a fish and wildlife program, recreation, public libraries services, a museum and historical sites program, and a cultural program which is presently being developed.

The purpose of the Department, as a whole, is to assist all Territorial residents in the pursuit of their culture, traditions, life styles and skills, in keeping with their abilities and personal aspirations, and to provide for the preservation of their way of life, and their traditional pursuits of hunting and trapping through an effective game management program.

Fish and Wildlife Service

Fisheries Development

The major thrust in fisheries development during 1975 was the promotion and development of commercial fisheries for the domestic market. In excess of 50,000 pounds of Arctic Char were harvested from Nettilling Lake on Baffin Island and sold on the Frobisher and Resolute market. Smaller local fisheries were undertaken on Hall Lake on Melville Peninsula and several lakes in the Baffin and Mackenzie regions.

Close liaison is maintained with the Central Region, Fisheries and Marine Services, Environment Canada. Through co-operation, major fisheries activities are being monitored to ensure that a logical long term fishery development program is followed. Commercial and sports fisheries are monitored, unexploited stocks assessed and domestic harvest recorded.

ig Game Management

management studies continued on barren-ground caribou, polar bear, grizzly bear and bison. Caribou herds on South Baffin Island, Prince of Wales Island, Somerset Island and Coats Island were studied to determine population levels and seasonal distribution. A study of the caribou herd wintering in the Richardson Mountains east of the Mackenzie River Delta was completed. Studies of this nature are invaluable in protecting this valuable resource for future harvesting by the local population.

The Fish and Wildlife Service continued assisting native communities in harvesting caribou as a food source. Annually, approximately 20,000 caribou are taken in the Northwest Territories, primarily for domestic use. This amount of raw protein has a replacement value in excess of \$2,000,000.

Polar bear studies continued in cooperation with the Canadian Wildlife Service. Regions receiving attention included the Central Arctic, Baffin Island, Somerset Island and Boothia Peninsula. Polar Bear denning studies were conducted by staff on the fish and Wildlife Service, assisted by local guides in the Baffin and Keewatin regions.

The grizzly bear study in the Mackenzie Mountains, along the western border of the Territories, is continuing and will provide needed information required for the management of this species in light of proposed development in this area.

rapiine Management

There was some reduction in the overall value of wild fur production during the 1974-75 harvest season; however, the total value of \$2,090,000 was still well above the long term average.

A reasonably stable market demand was found for several species with prices remaining at or near previous levels. Lynx pelts sold for an average of \$80 although production reflected a general low in the natural cycle, with only 1,243 skins being marketed. Seal skins average \$17.25 for 4,500. Muskrat production increased by 100,000 pelts to 138,000 at a steady price of \$1.90.

Declines were noted in the average prices of fox and polar bear. White fox was down from \$30.21 to \$17.68, while the catch was reduced from 40,500 to 25,000. Colored fox declined 20 per cent to 30 per cent on volumes similar to 1973-74. A continuing decline in the price of polar bear hides was noted, although it is believed that the market has now levelled off at these lower prices. The number of hides sold dropped from 452 to 422 with prices declining from \$1,074 to \$648. Beaver production rose from 3,300 pelts to 5,600 at a \$13.50 average. Marten also increased from 5,600 to 8,000 at \$16.69. Mink were down from 3,300 to 1,380 at a reduced value of \$17.15. The production of wolf pelts doubled to 1,445 at a \$62.00 average.

Greater emphasis is now being placed on training of young trappers. To complement the community courses conducted by Fish and Wildlife officers, a nucleus of proficient trappers has been selected to act as instructors. A formal training program was given to these trappers to prepare them in developing and presenting training courses in their home communities. Major topics included teaching methods for young students, trapping techniques, fur handling and marketing, bush living and survival, equipment care and preservation of wildmeat and fish.

In an effort to increase production of beaver pelts in areas that are being under-utilized, experiments are underway which are designed to better familiarize the trapper with his area through participation in aerial surveys. Early fall trapping for this resource is also being encouraged.

Settlement Hunter's and Trapper's Associations are taking an increasingly active role in all matters dealing with renewable resources in their areas. The emphasis has been on service to their membership through the organization of harvesting projects such as whaling, caribou hunts, commercial fishing, sealing and ammunition reloading. In an effort to be self-supporting, many of these associations have undertaken small contracts, sold meat and fish and became involved in tourism ventures. Through regional

meetings of representatives of these associations an information exchange has developed, not only between themselves but with government and private agencies on matters relating to natural resource management.

A fur marketing service operated by the Fish and Wildlife Service provides trappers with the opportunity of shipping furs direct to auction houses in Southern Canada resulting in higher financial return to the trapper. Shipments of muskrat increased from 17,800 pelts in 1974 to nearly 20,000 pelts in 1975 and marten from just over 600 in 1974 to nearly 1,100 in 1975.

Environmental Management

The increased pace of exploration and development in the North has created the need for greater involvement of the Fish and Wildlife Service in environmental management. A staff position was allocated to co-ordinate environmental assessment and to recommend operating conditions to minimize the impact of development on wildlife. Consultation with settlement Hunter's and Trapper's Associations has been encouraged including review of industrial applications for land use as well as offshore drilling for oil and gas.

Recreation

The Recreation Division endeavored in 1975 to develop a new recreation policy in consultation with sports groups and communities. This policy would encourage local involvement, leadership training and leisure time education through improved community services. Discussions with community councils, sports organizations and government agencies are continuing.

During the year, territorial wide clinics were held covering several sports. There were also a number of NWT championships held by various sporting organizations.

A major activity of the Recreation Division was the organization of participation of the NWT in the Canada Winter Games. Following playdowns throughout the Territories, 130 athletes were chosen and competed in these games in Southern Alberta. A highlight of the games was the appearance for the first time of a group on northerners demonstrating traditional Arctic sporting events.

The Division organized participation in the fourth Arctic Winter Games at Sheterville, Quebec in March 1976. Two hundred and twenty-six competitors from the Northwest Territories took part, competing in a total of 13 sports. Trials prior to the games involved some 3,000 athletes representing all regions of the Territories.

The Federation of Sport North was organized during the year. Representing all amateur sports organizations, the federation aims to promote, encourage and stimulate the physical, intellectual and moral development of people of all ages and walks of life through participation in sports.

The ever popular Northern Native Games were held in Fort McPherson in July. Over 300 participants from the Yukon, Alaska, Northern Quebec and the Northwest Territories gathered for this uniquely northern cultural and athletic celebration.

The first Territorial Recreation Directors' Workshop was held in Yellowknife with representatives of 26 communities attending. The week long workshop featured recreation development at the community level.

Library Services

During 1975, the Territorial Library Services continued to implement its programs to provide and develop library services throughout the Territories and assist northerners, be they from the general public, industry or government, to gain access to materials which satisfy their informational, educational and recreational needs.

The Children's Program received a grant from the Canadian Federation of University Women to fund a reading stimulation project consisting of the provision of book and cassette kits for the use of children in the member libraries. Attendance of children at storyhour sessions in the libraries increased during the year. These sessions have resulted in an increase in circulation of children's materials. The program of class visits and puppet shows in the various schools resumed in the new school year.

Adult circulation figures showed some increase in the borrowing from all libraries. Circulation figures in themselves record only one facet of a library's function in the community and, equally meaningful is the use of libraries in other ways.

One special project which was carried out in co-operation with the Continuing and Special Education Division of the Department of Education, was the arranging of visits to the libraries at Inuvik, Yellowknife, Hay River and Fort Smith of 10 well known Canadian poets. Audiences totalled approximately 2,500 persons. This project was funded by the Canada Council.

The Canada Council also made contributions to the eight member libraries and two school libraries in the form of kits of 200 books by Canadian authors.

The Library Services co-operated with the Department of Education in supplying a total library service to the community of Spence Bay, with the opening of a library at the Keevak School. The local librarian, appointed by the Settlement Council, is paid jointly by Library Services and the Department of Education and serves both the school and the community.

The government library, in Yellowknife, which has been in existence for the past two years was transferred to the division in 1975. The library serves both the NWT Council and the government administration.

Museum and Historical Program

Construction of the Territorial Central Museum, although delayed by a cutback in capital funding, continued with the first phase scheduled for completion early in 1976. Staff is being hired and the opening of the museum is expected in the autumn of 1976.

A special program known as "Grants for Northern Historical Development" has been established. Its purpose is to provide funds for the use of the three major northern ethnic organizations to encourage preservation of native traditions, cultural and history.

The program to plaque and commemorate northern historical sites continues. In May a cairn was erected at Richardson Point on Adelaide Peninsula to commemorate the many Arctic explorers whose lives were lost in the vastness of the North. This cairn is one of a series to be erected in strategic locations in co-operation with the NWT Council of the Order of St. John and the Franklin Probe Society. Each cairn contains a cache of food and survival equipment for use in event of a present day emergency.

Department of Personnel

On April 15, 1975, the Executive Committee announced the reorganization of several departments and the formation of a unified Department of Personnel. Prior to this, the personnel function had been split between the Departments of the Executive Secretariat and the Department of Administration.

Under the guidance of the new director Mr. R. H. Bates, the effectiveness of the combined personnel work force has been increased. The Department is organized into six functional areas covering: staffing, housing, classification, pay research, employee relations, and administration, training and regional coordination.

Staff Housing and Transportation

The inventory of staff housing units totals 327 units, 835 of which are owned by the Government. Needs of staff housing programs are met by government funded construction of new houses or by leasing, depending on supply and demand and with careful consideration of the financial implications.

In 1975 the construction program consisted of 38 units of new housing throughout the Territories. In addition, 50 new leased units were acquired. Over 100 housing units received repairs or modernization in order to extend their economic life.

Transportation of employees and their personal effects is co-ordinated by this section in support of the staffing section. The service is provided to new, transferred and promoted employees.

A newly designed central housing inventory was implemented in Yellowknife. Its inventory will be computerized and expanded to include the regions.

Recruitment and Placement

In spite of a shortage of government housing, a total of 653 competitions were completed. These resulted in 667 appointments. In addition, 153 transfers and 241 promotions were processed.

The competition process was formalized for the benefit of management and the Northwest Territories Public Service Association. Revised systems for keeping applicants informed of their status at all stages of the process were implemented.

In the latter stages of the year a greater effort was made to identify manpower resources within the government and to promote from within the Public Service. A substantial increase in the number of transfers and promotions resulted from this effort.

Employee Relations

March 1976, being the end year for both collective agreements with employees in the Public Service, attention was focused on developing the joint consultation process.

This has been approached through regular joint consultation meetings between management and employee representatives and working with managers to improve communications with employees directly.

Failure to negotiate a salary schedule for the 1975-76 bargaining year with either the Northwest Territories Public Service Association or the Northwest Territories Teachers' Association resulted in this matter being presented to arbitration. The arbitrators granted a \$500 across-the-board annual increase to the NWT Public Service Association and a 3.3 per cent increase to the NWT Teachers' Association.

Personnel Policy and Program Review

Changing conditions demanded that considerable attention be given to policies governing personnel management. A major task commenced in 1975 was a review of the Public Service Ordinance and Regulations so that changes in legislation may be undertaken as necessary.

Classification

A highlight of the year was the implementation of a new job evaluation system. Work on this project commenced in late 1974 when almost every position in the Government was described in detail. From January 15 to September 15, a working committee composed of senior departmental representatives and several personnel officers analysed these position descriptions and developed the new system.

In September a proposal was presented to the Executive Committee and received their approval in principle. The proposal contained two job evaluation methods: point rating and class and rates. It reduced the number of class standards from 208 to 86 point rated classification levels and 21 class standards. A more workable salary grid structure was also approved.

Pay Research

A pay research section was established in 1975 to develop equitable compensation policies and programs. It played a key role in researching and determining new rates of pay for the majority of positions within the Public Service. The results resolved numerous pay inequities and established proper relativity between similar positions within the government.

Training and Development

This year saw a positive move towards an enlarged manpower training and development program. The Personnel Task Force Report recommended that a training program be initiated to reduce turnover, improve morale and increase productivity. Additional funds were requested from Treasury Board in order to implement a viable training and development program. Should these funds be made available, an improved program of career development for northern residents will be initiated in the 1976-77 fiscal year.

During 1975, 13 employees were granted educational leave. Financial assistance in the form of allowance equal in some cases to full salary was provided to individuals who were undertaking educational upgrading considered essential to their careers in the NWT Public Service.

Administration and Finance

An administration and finance section has not existed in the personnel area since the original Department of Personnel was dissolved in 1970. With the re-establishment of the Department of Personnel, this section became essential. Several recording and reporting systems were initiated which assisted overall personnel management activities.

Regional Co-ordination

The objective of the regional co-ordination section is to improve communication between the headquarters personnel functions and the regional offices. Several visits to regional offices and a concentrated effort to keep each regional office informed on policy changes was carried out.

Department of Planning and Program Evaluation

In April of 1975 the former Department of the Executive Secretariat was reorganized and the name changed to the Department of Planning and Program Evaluation. The purpose of this reorganization was to provide greater emphasis than in the past to both short- and long-term planning for the Northwest Territories and to expand the government's efforts in assessing Territorial programs and projects as to their effectiveness in achieving the intended goals and objectives. The new Department also provides for proper co-ordination and interpretation of statistical data.

Planning Division

A planning division co-ordinates and monitors planning in the Territorial Government.

In 1975, in addition to short- and long-term planning, the division added a regional planning capability, with immediate responsibility for developing a regional plan for the Mackenzie Delta. The Mackenzie Delta Regional Plan is intended to recommend what action is required by both the Territorial and Federal Governments to meet the impact in the Delta of the proposed gas pipeline, proposed gas plants, further oil and gas exploration, and any other major developments in the Mackenzie Delta. The plan is also intended to influence the manner in which this development takes place, to maximize benefits to the people of the Northwest Territories, and to ensure the lowest possible level of negative effects. When the Delta Plan is completed this group will start the development of a plan for the High Arctic.

Other planning and research projects undertaken in 1975 included, metric conversion in the NWT, International Women's Year, implementation of the outpost camps policy, and a Northwest Territories Government financial review.

The Director of the Department of Planning and Program Evaluation chairs the Inter-departmental Planning Committee. This committee is composed of all of the department directors of the Government of the Northwest Territories.

The planning division also plays a major role in the development of the Government's program priorities during the preparation of the five-year forecasts. This work is carried out in co-operation with the Department of Finance, which has the responsibility for preparing the financial aspects and co-ordinating the estimates and forecasts.

Program Evaluation Division

The objective of the program evaluation division is to provide members of the Executive and other managers in the Territorial Government with information which will enable them to improve the effectiveness and efficiency of the programs for which they are responsible. Major activities during the year included the development of an overall evaluation plan for all departments of the Territorial Government; evaluation of the effectiveness of the Territorial Government in providing the public with knowledge of its programs; evaluation of the "District Service Office" structure in the Keewatin and the applicability of this concept to the Fort Smith Region; and the evaluation of the effectiveness of the local government development program.

Science and Statistics Division

Communities are now playing the major role in deciding whether scientists should be allowed to work in their midst. While for many years a scientist coming into the Northwest Territories to conduct research was required to have a licence, the increasing number of scientists in relation to the small population caused many residents to feel that some of the studies, particularly in the social and medical sciences, were an unwarranted invasion of their privacy. A policy has been established that no research which would directly affect or be of particular concern to a native community would be licenced until the community has been consulted.

The majority of applications have been approved by the communities, and some scientists have become highly respected by, and have developed warm relationships with the local people. During 1975 a number of proposed research projects were felt by the local people to be an intrusion; in every such case the community's wishes were respected and no licence was issued.

Special Projects and Development Division

The special projects and development division deals with major development projects.

The development of the new lead-zinc mine at Strathcona Sound on Baffin Island is on schedule with good progress being experienced on all phases of the development. Inuit employment, a key objective of the development, has progressed with 54 native northerners being employed during the summer of 1975. Phasing in of production is due to start in October 1976. Once the project has advanced to the operations stage, expected in 1977, the division will turn over line management roles to the various departments and concentrate on new projects of a similar nature.

Audit Bureau

The Audit Bureau accepted the Territorial Estimates as the base for internal audit last year and broad programs were developed and tested during 1975.

The Audit Bureau continued its training program to upgrade native northerners in recognized accounting professions. At the same time auditors visiting settlements to perform audits assisted settlement staff in resolving many accounting problems.

Staff of the Auditor General of Canada conducted a comprehensive review of the Audit Bureau's operations in June of 1975. The report covered types of audits, priorities, audit programs, professional competence, reporting relationships and organizational matters. The Bureau was commended for the development work done on audit programs and for the assistance provided to community staff.

Department of Public Services

The Department of Public Services provides a wide range of services to the other departments of the Territorial Government and to the public at large. There are six divisions within the department dealing with legal services, workers' compensation and labour, safety, registries, consumer affairs and court services.

Legal Services

The Legal Services Division provides legal services to the Territorial Executive, the departments of the Territorial Government, the various boards created under the authority of Territorial ordinances, and in some cases to the public, for example, in enforcing family maintenance orders and in assisting victims of crime with their claims for compensation. The Chief of Legal Services, in addition to being responsible for the work of the division, also acts as Legal Advisor to the Territorial Council.

Public Trustee

The Public Trustee acts as administrator of the estates of deceased persons; the committee of the estates of mental incompetents; the guardian of children in court proceedings and trustee of their estates; and administrator of the estates of missing persons.

In addition to her statutory duties, the Public Trustee at the request of adults who have inherited money, will invest the money for them and pay it out periodically as they may request. In many of these cases, she is advised and assisted by staff of the Department of Social Development.

Safety Division

On April 1, 1975, the new Industrial Ordinance came into effect. The ordinance sets the standard to be provided and maintained by an employer and an employee for a safe working environment.

The Boiler and Pressure Ordinance, the Electrical Protection Ordinance and the Petroleum Products Ordinance were also updated in the past year. The 1975 Building Code came into effect in January 1975.

The policy is to take the program to the people by making inspections, investigations, reviewing building plans and providing safety training programs. Public safety education is a necessary element of this program.

There were 3,500 fire inspections of public buildings, low cost houses and Northern rental housing. Grade seven to nine students were trained in the use of fire extinguishers and save-a-life resuscitation procedures.

Boiler inspections totalled 2,000 and there were also about 2,000 electrical inspections.

Fire loss statistics were up. This was due to loss of two helicopters and six large buildings.

Worker's Compensation

The three member Workers' Compensation Board and its support staff coped with the additional responsibilities and duties placed upon them by the new Ordinance with a minimum of problems. Illustrated booklets were widely distributed covering the procedures to be followed and the benefits of the scheme. The booklets and information posters were also translated into Eskimo syllabics to better inform the increasing work force located in the eastern and central arctic regions.

The Board took more vigorous action in the enforcement area by laying charges for violations to ensure that all workers in the Territories are adequately covered and promptly compensated when injured.

The Board hosted a one-day safety seminar at which various regulating agencies, including workers' compensation, explained their role in safety for the work force.

During the 1974-75 period 2,468 claims were processed; 1,246 employers were registered and payroll increased from \$123,079,923 the previous year to \$153,448,831. This compares to a payroll in 1965 of \$32,939,767.

Labour Administration

Work continues on the development of further labour legislation to meet the rapidly developing needs of the Northwest Territories. Illustrated booklets covering the Fair Practices and Labour Standards Ordinances were well received by the public at large and demand has been heavy. A translation into Eskimo syllabics was provided to meet public demand from the eastern and central arctic regions.

The Labour Division hosted the annual convention of the Canadian Association of Administrators of Labour Legislation in Yellowknife in July 1975. It was the first time that this event had been held north of the 60th parallel. The occasion provided an opportunity for the exchange of information and discussion of labour problems affecting Canada, its provinces and territories.

Case work in the form of complaint processing, in terms of employee grievances, has continued under the provisions of the Labour Standards and Fair Practices Ordinances.

Registries

The Motor Vehicle Registry which contains the Highway Transport Board, registered some 15,316 vehicles in 1975 with over 13,800 drivers licensed during this period.

Throughout the year the Highway Transport Board held public hearings at Yellowknife, Hay River and Inuvik. It increased allowable gross weights for trucks to 110,000 lbs. in an attempt to combat increased costs in the North. In 1975 the Board licensed 212 carriers for highway transportation of goods and passengers.

The Business License Registry issued over 500 licences, indicating growing activity in the business sector of the Territories.

The collection of statistical information for the Indian Band Membership Lists now occupies a great deal of the time of the Vital Statistics Registry. A staff member accompanied the treaty party throughout all of its travels this past summer.

In order to provide greater protection for the residents of the Territories, and to better regulate the insurance industry, Council passed a new Insurance Ordinance in 1975. This Ordinance is administered by the Insurance Registry and provides for the licensing of all companies, agents, salesmen, brokers, and adjusters.

The Legal Registries which include Land Titles, Companies, Societies and Co-ops, Securities and Documents also showed a marked increase in activity. For example, the revenue generated in the Companies Registry has doubled in the past four years.

Legal Aid

The legal aid plan for the Northwest Territories is under the direction of an appointed committee. A total of \$136,449.76 was spent during the fiscal period April 1, 1974 to March 31, 1975. This was an increase of about 21 per cent over the program expenditures in 1973-74.

The Legal Service Centre at Frobisher, or the Maliiganik Tukisiiniakvik Society, became fully operative on April 1, 1975, under the day by day supervision of a young lawyer recruited from Vancouver. The aims of the Maliiganik Tukisiiniakvit Society are to establish, maintain, promote and expand community legal facilities for the provision of free legal advice, education and representation to indigent residents of Frobisher and area. This operation co-operates closely with the NWT Legal Aid Plan and provides an important auxiliary service in representing clients in Justice of the Peace Court in Frobisher, and also does substantial legal defence ground work in preparing cases to be heard by Circuit Courts.

Another development during the year with important potential was the establishment of the NWT Native Courtworkers Association in early May. The Association aims are orientated towards crime prevention and are based on successful programs for Indian ancestry in some of the provinces.

Consumer Affairs

Consumer Affairs inquiries and complaints covered a broad range of transactions and were dealt with under Territorial law or referred to the Federal authorities when Federal legislation applied. While major activities centered on administering the Consumer Protection Ordinance, there was also a considerable number of inquiries under the Landlord and Tenant Ordinance and various other matters handled under other Territorial legislation.

Pamphlets were produced on the rights and responsibilities of both tenants and landlords and on the Consumer Protection Ordinance.

The Consumer Division also took over the issue of lottery and bingo licenses and policed these operations to insure that the prizes advertised were actually awarded and that the profits derived were used for the benefit of charities or in the public interest.

Court Services

The Court Services Division provides support services for the judiciary which consists of the Supreme Court, Magistrates Court, Family and Juvenile Court and Justice of the Peace Court. There are 15 judicial officers and members of the Court staff all located in Yellowknife.

Justice is dispensed in the Northwest Territories by regular, supreme and magistrate court circuits. Justice is also dispensed throughout the Northwest Territories by the dedicated efforts of justices of the peace who dispose of approximately 70 per cent of the criminal cases each year. The Territorial Government also appoints coroners who act under the authority of the Coroners Ordinance to investigate deaths by accident, violence or by any unexplained cause.

In September 1975, an Inspector of Legal Offices was appointed. He is responsible for the recruitment and training of justices of the peace, coroners and juvenile court judges.

Department of Public Works

The Department of Public Works provides support to the program departments of the Territorial Government, contributing to the development of the North.

Services include the planning and building of schools, offices, staff housing water and sewer systems, garages, warehousing, campgrounds and roads.

Another function is the maintenance of both light and heavy mobile and construction equipment.

The Department is staffed by some 500 semi-skilled and skilled tradesmen and professional people.

Procurement and late delivery of materials to site in the short Arctic summer continues to be a problem.

Planning and Administrative Division

The Planning and Administrative Division has the role of long- and short-range planning for policies and financial procedures in the capital construction and operation and maintenance program.

The division co-ordinates and compile departmental financial forecasts and estimates, controls and analyses departmental budgets and provides financial management of contracts and direction to divisions and regional offices on all financial matters.

Direction and advice is provided in all matters pertaining to personnel policies and procedures and departmental staffing which includes the recruitment of staff.

Highways Division

Funding of full highway maintenance needs was not possible in 1975 as a consequence of general financial restraints. Consequently, some aspects of maintenance were curtailed, primarily those which would not be directly felt by motorists.

Despite financial difficulties, some improvements were made such as extension of dust treated passing zones from two miles to four miles. However, the

vision had to defer the plan to convert one of these zones per year from calcium chloride treatment to bituminous oil treatment in order to eliminate the hazard of loose granular material in these high speed areas.

A number of traffic information signs were erected with distances shown in kilometers as an introduction to full scale metric conversion of highway signs by the national schedule of September 1977.

In 1975, 35 miles of the Dempster Highway eastward from Arctic Red River were taken over as a maintenance responsibility. A permanent road link now exists between the communities of Fort McPherson, Arctic Red River and Inuvik.

After a very successful and prolonged operating season in 1974, ferry operations continued smoothly and problem-free during the 1975 season.

The ferry *M.V. Merv Hardie* at the Fort Providence Crossing, received an improved de-icing system. The vessel continued in operation until December 10, 1974 and on December 19, 1974, the ice-bridge crossing had developed sufficiently to support light traffic. This meant an approximate three week extension of highway usage by the motoring public.

Radar was installed on this vessel in April 1975. This installation will enable the vessel to operate in fog conditions, which will further increase highway usage.

The *M.V. Johnny Berens*, on the Liard River crossing near Fort Simpson, continues to be operated under Highways-administered private contract. The vessel's hull bottom was improved to guarantee more efficient service.

The *M.V. McQuesten* is in the final stages of refit for service at the Mackenzie River Crossing near Arctic Red River in June 1976. This vessel will serve as an interim link-up of the communities of Arctic Red River, Fort McPherson, and Inuvik, until a new vessel is built, concurrent with the completion of the Dempster Highway.

Projects undertaken at the request of the Department of Local Government included road construction at Rankin Inlet, Edzo and Norman Wells, airstrip lengthening at Trout Lake and landfill for a new residential area at Norman Wells.

The Department of Indian Affairs and Northern Development under the federally financed Northern Roads Program assigned a number of reconstruction projects. These included improvements to the Yellowknife Highway between Edzo and Yellowknife, the Hay River Highway within the town limits on Vale Island, and an 11 mile portion of the Fort Smith Highway near the Hay River Highway.

Operations and Maintenance Division

an 11 mile portion of the Fort Smith Highway provides professional and technical assistance. The Operations and Maintenance Division oversees and directs the regional DPW establishments and initiates departmental policy and procedures for maintenance and repair.

During 1975 maintenance men positions in the Eastern Arctic were reclassified from part-time to full-time, with the exception of one position. This increased employee satisfaction and reduced significantly the need for casual workers.

The buildings and works section concentrated on the problem of energy conservation in existing and new government buildings. Study of heating and ventilation systems now in operation revealed that considerable waste has been designed into many buildings. Corrective action is being initiated on this as well as on excessive electrical power consumption.

The equipment management section completed a program for disposal of the accumulation of obsolete and unrepairable equipment, prepared a new work order and records keeping system for equipment, and completely updated the capital assets equipment inventory. They have also implemented rebuilding of a number of heavy equipment units as an alternative to heavy capital outlay for new units.

The property management section attacked a long standing backlog of property matters. Negotiations resulted in new and revised leases and agreements which have resulted in considerable savings and recoveries to the government.

Project Management Division

The Project Management Division is responsible for carrying out the government's Capital Construction Program. Although the total value of the program, compared to 1974, increased from \$17,500,000 to \$20,000,000, there was a substantial drop in the number of projects – from 307 to 218 – and therefore an increase in the average cost per project from \$57,000 to \$91,740. This increase was partly due to steadily rising construction costs, but also because there were several large-scale projects on the construction program in 1975.

Twenty-five staff houses were erected in 1975 at various locations throughout the Territories. At Frobisher the first stage of a major housing renewal program is now well under way with the construction of 15 row houses. The division is also engaged in developing plans for future large staff housing projects at Inuvik and Rankin Inlet, as well as a fresh approach to staff housing in settlements.

The major school construction projects in 1975 were at Fort Smith, where a new school and major repairs to the fire-damaged Breynt Hall were completed, at Fort Simpson, where a renovation and extension project took place, and at Yellowknife, where additional facilities to the Sir John Franklin School is under way.

The Museum of the North, situated on the future Capitol site on the north shore of Frame Lake in Yellowknife is well under way. It is expected that the project will be spread over a three-year period in order to keep within financial restrictions.

Construction of facilities to accommodate the new District Service Office in Rankin Inlet was completed. Both office building and staff houses are now in operation, and a water supply system with sufficient capacity for the foreseeable future has been installed. Experiments with low-cost utilidors and other forms of municipal servicing are being carried out, with the expectation that the results will also be of importance for future installations at other arctic locations.

Other engineering projects included construction of water reservoirs at Eskimo Point and Pangnirtung. In both places plastic liners were used, and while this is not a new method in more temperate parts of the country, it is the first time it has been attempted in the Arctic.

Installation of bulk fuel oil tanks and bulk gasoline tanks has continued with the installation of these facilities at Spence Bay, Pangnirtung and Tuktoyaktuk.

The addition of three new floors to the Y.K. Center Building in Yellowknife made it possible to ease the cramped conditions of several government departments.

The Resolute new townsite program is now well under way. All buildings scheduled to move from the old townsite have now been relocated on prepared lots in the new townsite, and new buildings to complement them are under construction and planning. Roads and power have been provided, and permanent water and sewer services will follow shortly.

Department of Social Development

Of major significance to the Department of Social Development in 1975 was the appointment of an elected member of the Territorial Council, Mr. Peter Ernerk, Keewatin, as executive member responsible for social development.

With the appointment of a co-ordinator of staff development, strides were made in establishing a training sequence to facilitate indigenous staff preparing themselves for promotion within the Department.

Special Services

The Special Services Division is involved in the development, maintenance and co-ordination of community-based services to meet the needs of children and adults within the Territories. Programs include child welfare, juvenile probation, day care, homeowner services, services to the handicapped and services to the aged.

The Department has centralized its referral system regarding both children and adults with special needs, making more effective use of the available resources whether they are in the North or South.

Communities have expressed concern about vandalism and juvenile delinquency. Some communities are endeavouring to understand the roots of the problem and through organized groups of interested citizens effect some positive changes. The Department fully supports such community based action and offers assistance and guidance upon request.

During the past year the Department has established a centralized adoption registry and through this service is able to fully co-ordinate adoption placements within the Territories. Centralization of the service has also enabled liaison with the recently established National Adoption Desk in Ottawa. If we have a child with special needs in our care for whom we cannot locate a suitable home in the Territories, we have access to resources throughout Canada through the National Desk. As in other areas of Canada, the Northwest Territories is able to locate good adoptive homes for the children who are available for adoption.

The Department has continued to monitor day care service throughout the Territories, offering guidance to established centres and groups considering developing such a service. The Territorial policy, as approved by the Territorial Council, was that day care services would be made available based upon need, which would enable mothers of pre-school children to enter the labour market or take advantage of educational opportunities. However, the popularity of existing services and the impetus placed upon developing programs to assist women during International Women's Year has brought about an increasing demand for such service in many communities throughout the Territories.

The Department of Social Development with the co-operation of the Department of Education and Health and Welfare Canada has begun to compile a registry of handicapped persons in the Northwest Territories. As soon as the information is complete, plans will be formulated for services and facilities to meet the special needs of these residents.

Corrections Services

Community correctional services are provided by departmental field staff designated as probation officers.

Throughout the Territories these persons, many of native origin, serve as counsellors and supervisors to offenders and ex-offenders requiring probation, parole and aftercare services.

The Yellowknife Correctional Centre accommodated sentenced persons from 70 to 90 per cent of its capacity throughout the year in the men's division. There was an increase over previous years in the number of women offenders admitted.

Rehabilitative programs for men continued to be varied, ranging from academic and vocational training courses within the Centre, to fire-fighting courses for selected inmates who later took part in actual fire-fighting during the hot and dry summer. The re-entry to the community of many inmates has been assisted by the work release program.

The Baffin Correctional Centre functioned well during the past year, and appears to be achieving its objectives with a minimum of difficulty.

The community of Frobisher has accepted the program and co-operated in employing residents eligible for work release, and accepting participation in community sports and recreation programs by those on temporary passes.

The personnel of this centre remain totally Inuit with the exception of the superintendent, and no difficulty has been experienced in recruiting replacement personnel for a normal turnover rate.

The resident population rose from a total of six members to a consistent average of 15 during the past year.

The South Mackenzie Correctional Centre has also been well accepted by the community of Hay River.

A land program, instituted to re-acquaint the native resident with the skills of his forebears and to improve self-esteem, has met with success in its first year. During the summer a permanent log cabin was erected by resident labour. It is situated in the area of Kakisa River to serve as a base for further hunting and trapping activities in 1976.

With a maximum capacity of 20 residents, this centre has been at or near full occupation during the past year. It appears that the concept of community correctional centres is working well. Time and the evaluation of recidivist rates should further indicate the value of these open centres as treatment resources.

Social Assistance

In recognition of the upward trend in the cost of living, social assistance food allowance rates were increased effective April 1, 1975. The policy is to vary food allowance rates relative to shelf prices in each community. There are five different scales of food allowances.

In co-operation with the Employment Division of the Department of Economic Development, the department has helped to finance employment-generating plans in a few communities. These labour pools have provided employment opportunities, financed in part by the reallocation by the Territorial Council of social assistance dollars.

The level of social assistance expenditure continues to rise due partly to the higher costs of providing goods and services to recipients.

Alcohol and Drug Program

The Alcohol and Drug Program has worked closely with the NWT Alcohol and Drug Coordinating Council (NWTADCC), promoting local interest in dealing with alcohol and drug problems. The program's major role has been in providing information on treatment, education and prevention in the alcohol and drug areas.

Nineteen applications were received by the Coordinating Council of which 14 were approved, for a total grant expenditure of \$341,092.33 for this fiscal year.

Projects funded included a seminar on Alcoholism organized by NWT Registered Nurses Association to increase their knowledge and counselling skill. Funds were provided for the Baffin Wide Regional Conference of Community Alcohol Committees to update information and develop strategy for dealing with local alcohol problems.

Recreational type alternatives and centres were funded in Fort McPherson, for a drop-in centre, Clyde River for a recreation area club, Eskimo Point for a recreation cultural director. Further unique examples of local community solutions that were funded included a night watchman in Spence Bay to patrol the town on weekends for inebriates who may have fallen in the sub zero temperatures while making their way home, and advising appropriate government agencies of cases of child neglect, abuse and fighting resulting from drinking. The Idlajuak halfway house in Frobisher and the continued funding of the Yellowknife Detox-Rehab Centre are examples of treatment services being funded.

In conjunction with the existing Koe Go Cho Society in Fort Simpson the NWTADCC is anticipating the development of a comprehensive service for native people in upper Mackenzie Valley communities who have alcohol or drug related problems.

NWT Medical Care Plan

The NWT Medical Care Plan began operation on April 1, 1971. This plan covers almost all medically necessary services rendered by physicians and surgeons for all eligible residents.

Territorial Hospital Insurance Services

Guidance and executive authority for the administration of the Territorial Hospital Insurance Services Ordinance is provided by the Territorial Hospital Insurance Services Board. Medical advice for both ordinances is provided by medical advisers who adjudicate disputes over length of stay in hospitals and the propriety of charges for physicians services.

Again in 1975 all hospitals in Canada were faced with dramatic increases in costs which resulted in accelerating costs per patient day. In 1975 two of the Territorial hospitals – the Stanton Yellowknife Hospital and the H. H. Williams Memorial Hospital, Hay River – received accreditation status from the Canadian Council on Hospital Accreditation.

The "Mackenzie River Area Health Services Study" report became available in 1975. As a result of the recommendations contained in this report, planning was initiated to provide for an area health centre in Hay River, a community health centre at Fort Smith, and a regional health centre at Yellowknife. Construction is proceeding well on the Hay River facility which will include, among other services, an expanded hospital service with ambulatory care unit, a home care program, acute care services, and extended care (chronic care) services.

Northwest Territories Housing Corporation

Two new housing programs and an accelerated building program highlighted the second year of operation of the Northwest Territories Housing Corporation, a Crown Corporation of the Government of the Northwest Territories.

A total of 341 housing units were constructed, or are in various phases of construction in 26 communities throughout the Territories. The Keewatin region received 45, Baffin 76, Cambridge Bay 39, Hay River 117, and Inuvik 69. This includes 64 log houses built under a new log house program.

The log houses are the result of a successful pilot project carried out at Fort Resolution. Using a Trunor log lathe and cut-off machine purchased by the corporation, logs are turned, saddled and implanted for insulation in one operation. Approximately 1,500 running feet of logs are required for the construction of a three-bedroom log house, which also come in two, four and five bedroom sizes. Price per finished log averages \$2.00 per foot.

In keeping with Corporation policy of using northern artisans and labour whenever possible, local contractors, with only three exceptions, did all the construction for the 1975 program.

Logistics is still a major concern and Pelly Bay is a major example. Inaccessible by sea, the arctic coast settlement must rely on airlift, raising the landed cost of four-bedroom houses to \$47,000.

A shortage of mortgage funds limited the 1975 program. Senior citizens' accommodation at Aklavik, Baker Lake, Fort Franklin, Fort Smith, Frobisher, Inuvik and Yellowknife were deferred until money becomes available. Planned construction of single person's accommodation at Cambridge Bay, Frobisher, Inuvik, Rankin Inlet, Tuktoyaktuk and Yellowknife was also delayed.

During the year, 10 Country Home Assistance grants of up to \$5,000 each were awarded to families requiring assistance in constructing homes from locally harvested material in areas where no government subsidized housing exists.

Twelve Territorial first mortgages totaling \$144,000 were approved to residents who qualified. During the year, more than \$5.4 million was made available to 44 housing associations and 13 housing authorities, by way of accountable grants for utilities, services, maintenance, materials, labour and administration.

The corporation's head office at Yellowknife and district offices at Cambridge Bay, Inuvik, Hay River, Frobisher and Rankin Inlet are encouraging local organizations to assume greater responsibilities. Local housing associations and authorities retain all rental revenues from Corporation housing as an incentive to adequately assess and collect rents. Revenues are applied to their operations and maintenance budgets.

All rental/purchase units built for the corporation in 1975 have been increased in size to meet NHA requirements and for the first time, four and five-bedroom houses were made available.

A heating and maintenance program was developed by the Corporation, providing smaller communities with adequately trained service personnel.

At the end of 1975, the Northwest Territories Housing Corporation was responsible for operation and maintenance of more than 3,400 units of accommodation including 303 public housing, 73 senior citizens' and 59 single persons' units.

Two new programs initiated by the Corporation to encourage home ownership and increase local responsibility have been supported by the Council of the Northwest Territories and now await approval by the Federal Treasury Board.

The proposed Home Operations Assistance Program would provide financial aid for families whose home operating expenditures are much higher than can be afforded. Probably the biggest expenditure is for heat and power, where Northerners pay much more than the average Canadian. Annual heating and power costs average \$1,883 in the Mackenzie district, \$2,482 in the Franklin district and \$2,693 in the Keewatin district. Under the new program where operating expenditures exceed eight per cent of the adjusted family income, monthly financial assistance equal to the difference of actual costs (to a maximum annual quota) and the designated proportion of income would be provided.

The Home Acquisition Assistance Program would provide grants of from \$1,000 to \$5,000 to residents of the Northwest Territories for the purchase of an existing housing unit or construction of a new home. The amount of the grant will be determined by the geographical location of the dwelling which must be used as the principal family residence. The grant will be made on a once-in-a-lifetime basis to families consisting of at least one adult and one dependent child.

Day-to-day operations of the Corporation are carried out under the direction of the Managing Director. He meets with the Executive Committee, consisting of the heads of the Program, Planning and Research Division, Property and Contract Management Division, Finance Division and Administration Division to examine all business of the corporation.

To serve the housing needs of Territorial residents, the Corporation hopes to complete 600 homes per year under a five-year program. Further research and development projects are contemplated to provide suitable housing serving local needs.

Government of the
Yukon Territory

Government of the Yukon Territory (YTG)

Administration of the Yukon Territory

Responsibilities

To administer the Yukon Territory in accordance with the Yukon Act, Ordinances of the Yukon Territory and federal laws applicable thereto.

Council of the Yukon Territory

Responsibilities

The Council of the Yukon Territory's main responsibility is to exercise legislative authority as is designated by the Yukon Act.

Administrative and Legislative Support Services

Clerk of Council

Responsibilities

The Clerk of Council:
• ensures that the activities of the Executive Committee and its subcommittees are co-ordinated and that their decisions are implemented;
• provides legislative support services to the Yukon Council;
• provides administrative support services to the Commissioner;
• and
• provides informational support services to all Yukon Territorial Government departments concerning changes in legislation and internal policy guidelines.

Review of 1975-76

On March 5, 1975, Council convened to review the 1975-76 estimates and to consent to the appropriations and other financial bills required for the next fiscal year. Several other bills were passed including the Community Assistance Ordinance, the Compensation for the Victims of Crime Ordinance and the Government Employee Housing Ordinance.

At the spring session, convened on May 8, 1975, Council considered and passed amendments to several important pieces of legislation including the Game Ordinance, Municipal Ordinance and Taxation Ordinance. New ordinances passed included the Students' Financial Assistance Ordinance and the Municipal Employees' Benefits Ordinance. During this session, two members of the Executive Committee, Mr. Gordon McIntyre and Mrs. Hilda Watson, resigned from the Committee. Council nominated and the Commissioner confirmed appointments of Mrs. Florence Whyard as the member responsible for Health, Welfare and Rehabilitation and Mr. Dan Lang as the member responsible for Education.

In addition to her resignation from the Executive Committee, Mrs. Watson resigned her seat as member for the Kluane constituency. Shortly afterward, the member for Whitehorse Riverdale, Mr. Willard Phelps, resigned his seat following a ruling of the Supreme Court under the Controvention of Elections Ordinance. To fill the vacant seats, a byelection was held in the constituencies of Kluane and Whitehorse Riverdale.

A further session of Council opened on November 25, 1975. A new Highways Ordinance was approved as were important amendments to the Legal Aid Ordinance, Companies Ordinance, Elections Ordinance, Game Ordinance and Labour Standards Ordinance. Further amendments were approved to the Medical Professions and Legal Professions Ordinances. In addition to consideration of legislation, the Council dealt with a number of important policy issues at this session, the most important of which was the Yukon Territorial Government's Analysis and Position Paper on Indian Land Claims, a position which was generally approved by the members. Other policy matters discussed included an Agricultural Policy for Yukon, an Alcohol Problem Prevention Program, and the Task Force Report on a Tolerance Standard for Airborne Asbestos. The Federal Government's proposed Land Use Regulations were tabled and discussed at length. During this session, the Territorial Government announced a

program of budgetary restraints which included a freeze on hiring and on outside travel by government employees until April 1, 1976.

The first Council session of the 1975-76 fiscal year opened on February 18, 1976 to consider the estimates and appropriations required for the year 1976-77. Council agreed to several increases in taxation and approved a Homeowner's Grant Ordinance. A bill to establish a Public Service Commission in the Territory was deferred to another session scheduled for the spring.

During the year the Clerk's Office carried out an intensive review of the regulations which resulted in extensive revision and consolidation of existing regulations. A Regulations Review Committee was established to screen all new regulations before processing. A complete review of the Policy and Procedures Manual resulted in the issue of a completely revised manual to all departments.

The Clerk's Office also assisted the Commissioner in hosting the annual visit to the Yukon of Ambassadors to Canada from around the world. In the fall of 1975, the Clerk's Office arranged a series of tours for the Executive Committee which took the Committee members to all communities throughout Yukon and included public meetings with local residents at each location.

Plans for 1976-77

A number of administrative changes are expected to occur when most government offices are moved to the new Territorial Building. The move is expected to take place in late spring of 1976. New space arrangements and the anticipated appointment of a new Commissioner will require certain adjustments to the operations of support functions performed by the Clerk's Office.

At least two sessions of Council are expected to take place in 1976. During the coming year, work will begin on the development of a new Elections Ordinance for the Yukon to be completed by 1978.

A complete and thorough review is to be conducted on the Territorial Regulations.

Long-term Plans

Although the Territorial elections planned for 1978 will continue to be run by the Chief Electoral Officer, the New Elections Ordinance will contain administrative provisions allowing the Territory to administer its own elections in subsequent years.

In the Commissioner's opening remarks to Council in the 1974 (4th) Session, the commitment was made to council to phase out one appointed member of the Executive Committee during the life of the 23rd Council, thus giving a majority to the elected members. Following the deletion of the position of one member, there will be a reassignment of portfolio responsibilities.

Personnel Advisor

Responsibilities

The Central Personnel Office is responsible for recruiting and selecting civil servants and teachers; job evaluation and pay administration; administering and interpreting the Collective Agreements; contract negotiations; staff establishment control and organization analysis; employee appraisal, safety, training and the administration of fringe benefit programs.

Review of 1975-76

Recruitment

The following data represents the recruitment activity during the fiscal year:

Civil Service – Permanent Appointments

| | |
|---------------------|-----|
| Yukon residents | 243 |
| Internal promotions | 61 |
| Internal transfers | 30 |
| Outside residents | 41 |
| Total | 375 |

Teachers – Permanent Appointments

| | |
|---|----|
| Yukon residents | 39 |
| Outside residents | 51 |
| Sub-total (teachers appointed to permanent positions) | 90 |
| Kindergarten instructor | 7 |
| Total teacher and kindergarten permanent appointments | 97 |

Casual Appointments

| | |
|--------------------------------|-------|
| Civil Service | 1,052 |
| Teacher, kindergarten and aide | 195 |
| Total | 1,247 |

Total Government Permanent and Casual Appointments

1,719

Of the 375 permanent civil service appointments, 89 per cent were made from local residents of the Territory. Turnover by resignation represented 29 per cent on a base of 993 full-time and part-time permanent positions. Actual movement which includes appointments, promotions and transfers represented 38 per cent excluding teachers and kindergarten instructors.

A considerable increase in the number of local teachers hired occurred during the year and local hires represented 40 per cent of the total teachers hired during the course of the fiscal year. In addition, 100 per cent of the kindergarten instructors were hired locally.

In the latter part of the fiscal year the Government introduced a freeze on the hiring of non-essential positions for the period January 1 to March 31, 1976 in an attempt to reduce overall government expenditures.

Job Evaluation and Pay Administration

Approximately 265 position transactions and 44 classification and pay plan amendments were processed during the course of the year. A number of classes and class series were reviewed and, in particular, a Solicitor class series was established and the Probation and Social Welfare classes were reviewed and revised. A class series review was conducted for Civil Engineering classes of employment and Duplicating Equipment Operator classes of employment.

Staff Development and Training

Approximately 149 employees received some form of financial assistance from the Central Personnel Office during the fiscal year to participate in training seminars, courses or conferences, or to attend night school or complete correspondence courses. A considerable number of employees participated in First Aid courses offered in Whitehorse and outside of the headquarters area. Employees participated in Child Welfare, Hunter Training, and IBM courses; Basic Welding, Diesel Engine, Hydraulics, Power Shift Transmission and Steam Boiler courses; Fundamental of Budget Formulation, Introduction to Supervision, Managerial Skills Counselling of Persons with Alcohol Problems, and a number of extension courses in the areas of Commercial Law, Accounting, Sociology, Appraisal, and Personnel Administration. Three employees were sent on Pedagogical courses, one employee attended a full-time university institute to complete an M.A. Degree, and one attended a technical institute in BC. Personnel also assisted in the area of on-the-job training in co-operation with the Vocational Rehabilitation Program.

Staff Relations

On August 8, 1975 the Employer and the Public Service Alliance of Canada signed a two-year Collective Agreement, effective April 1, 1975 to March 31, 1977.

Contract negotiations commenced for the renewal of the Yukon Teachers' Association second Collective Agreement.

During the course of the year, three grievances were referred to an adjudicator appointed by the Yukon Public Service Staff Relations Board. In addition, the Public Service Alliance of Canada filed a request under Section 27 of the Ordinance for a determination concerning "seasonal employees".

The Employer, pursuant to the School Ordinance, Part VIII, requested permission from the Yukon Teachers' Staff Relations Board to prosecute teachers deemed to have illegally participated in a strike. The matter, at this time, is still before the Board.

Plans for 1976-77

The Yukon Teachers' Association and the Employer are presently negotiating for a renewal of their current agreement, which expires August 31, 1976. It is hoped that the parties will reach agreement in the near future to the commencement of the new school year. During the latter part of the fiscal year the employer will commence negotiations with PSC to renew their agreement which expires March 31, 1977. Both sets of negotiations are now under the provisions of the Anti-Inflation legislation and the Territorial Government has been named as a participant to that Act.

The Recruitment Section, in conjunction with the Department of Tourism and Information, is compiling a recruitment brochure for Civil Service appointments. This brochure will complement a brochure which is presently being utilized for teacher recruitment activities. It is anticipated that during the 1976-77 fiscal year additional Safety Committees will be established in communities other than Dawson City and Whitehorse. Emphasis will continue to be placed on First Aid courses outside of Whitehorse and Driver Safety Training and Winter Survival courses will be emphasized.

Personnel will be visiting regional offices outside of the central headquarters area to clarify questions pertaining to contract interpretation, personnel policies and regulations and enquiries concerning superannuation and related matters.

Statistical and Planning Advisor

Responsibilities

Primarily responsible for maintaining a statistical unit within the Yukon Territorial Government to:

- establish stronger links and more efficient communications channels with Statistics Canada and other external data collecting agencies;
- conduct liaison with all federal, provincial and territorial data generators;
- develop an adequate data and information base to enable territorial government departments and other daily users to extract desired information;
- liaise extensively with Statistics Canada and provincial statistical agencies and conduct surveys jointly with Statistics Canada and other provincial statistical agencies;
- answer enquiries and requests for information concerning the Yukon economy;
- advise the Commissioner as required on the social, economic and political implications of various reports and studies on the Yukon; and
- monitor and analyse Hansard, reports of committees and government White Papers from both federal and provincial jurisdictions to determine possible implications concerning the Yukon's economic development.

Review of 1975-76

A comprehensive compendium of statistics relating to all aspects of life in the Yukon was completed. Research continued concerning the compilation of existing statistics and their applications for the Yukon economy. Liaison with Statistics Canada proved beneficial in obtaining an update of census geographical areas, as well as an agreement to examine revisions in data collection and dissemination in several other areas.

A short informational sheet called the *Yukon Data Sheet*, providing a brief overview of five areas of life in the Yukon: land, people, government, economy and transportation and communication was developed.

The Statistical and Planning Advisor developed a strong relationship with the Alberta Bureau of Statistics which proved to be most beneficial in the field of federal/provincial conferences on various subjects including census, mineral statistics and methodologies regarding cost of living in the North.

Plans for 1976-77

The Yukon Statistical Review will be published with appropriate updates for the current year.

Statistics Canada and the Department of Indian Affairs and Northern Development are studying the feasibility of a pilot project labour force survey for the Yukon to take place in 1977.

Liaison will continue with the Department of Indian Affairs and Northern Development regarding the development of a comprehensive compendium of economic accounts for Yukon. This data will be comparable with that of all other jurisdictions and will, therefore, provide an excellent basis for comparison for future economic undertakings. The Statistical and Planning Advisor will participate with Statistics Canada in the planning and conducting of the 1976 census in the Yukon.

Long-term Plans

The Statistical and Planning Advisor is primarily responsible for three areas: economic analysis and advice; statistical collection and dissemination; and research. Long-term plans will be to strengthen both the economic planning capabilities and the research capabilities.

There are plans to develop a set of economic indicators for the Yukon and to publish the *Yukon Data Sheet* bi-annually.

Land Claims Secretariat

Responsibilities

To provide research and administrative services to the Commissioner and the Government of the Yukon Territory on matters concerning Yukon Indian Land Claim Negotiations.

Review of 1975-76

The Secretariat was actively involved in formulating a YTG Analysis on Indian Land Claims and in land claim negotiations.

Plans for 1976-77

The Secretariat will continue to provide necessary research and administrative services for negotiating sessions and related activities throughout the year.

Long-term Plans

The Secretariat will maintain its activities as required for the duration of the Yukon Indian and Land Claim Negotiations.

Internal Auditor

Responsibilities

To develop audit programs and conduct operational, financial and legislative audits of all departments.

Review of 1975-76

The major project undertaken was a Departmental Budget Survey which covered all O & M expenditures. A series of reports commented upon each department regarding past performance, variance reports, overspending, improvements in budgeting and commitment records. Various recommendations have been incorporated in the 1976-77 Main Estimates. This project served to establish the role of Internal Audit at the departmental level and further operational audits were conducted in the specific areas.

Other activities included fuel oil tax audits, a review of fees and licenses, weigh scale operations, the Electrical Rate Equalization Plan and implementation of the Auditor General's recommendations.

Plans for 1976-77

Activities in the above areas will continue to receive priority attention; some expansion of activities into other areas will be undertaken.

Long-term Plans

Development of a comprehensive audit function at the Territorial level.

Directorate Intergovernmental Affairs

Responsibilities

This Directorate's responsibilities span the full spectrum of government activities in the Yukon. The Directorate provides support services to the office of the Commissioner in the co-ordination of federal and territorial programs and in the general area of intergovernmental relations. Responsibilities also encompass the administration of the Federal Interdepartmental Co-ordinating Committee (FICC) and the provision of secretariat services to the General Committee, the Steering Committee and standing sub-committees of FICC.

Review of 1975-76

Since the establishment of the Directorate in August 1974 the Yukon Government has assumed a larger and more responsible role in all federal government activities affecting the Yukon and its people.

The complexities and impact of northern development policy has continued to place a heavy demand upon the Territorial Government and has created a need for a greater degree of co-ordination of activities of the many government agencies in the Yukon. During the year the Directorate has attempted to serve as a link to bring together divergent agencies of government and bring about a commonality in approach to the Yukon's development needs and problems.

A close liaison has been maintained with the (Federal) Advisory Committee on Northern Development (ACND) and through its membership on the various ACND Committees, the Yukon Government has expanded its participation in the ACND activities and has played a significant role in the work of the Committee during the past year.

The Yukon Government now has official representation on the following ACND Committees:

- General Committee;
- Committee on Transportation;
- Committee on Science and Technology
- Committee on Northern Communications;
- Federal-Territorial Economic Planning Committee;
- Committee on the Employment of Native Northerners;
- Interdepartmental Advisory Committee on Northern Roads.

A number of meetings of these ACND Committees were attended and a continuing liaison was maintained with the various committees and the ACND Secretariat in relation to activities and projects affecting the Yukon. The Directorate has worked closely during the year with the Science and Technology Committee's "Working Group on Scientific Facilities in the North" in relation to planning for the extension of DIAND's Northern Laboratories Program. A Yukon Planning Committee and a Users Working Group were established by the Directorate to assess needs and co-ordinate federal-territorial departmental participation in the planning process.

The Yukon Government has been actively involved in the work of the ACND Federal-Territorial Economic Planning Committee. A major area of activity concerned regional economic expansion in the North and the need for the development of a general strategy for socio-economic planning and development. The ACND Committee held a number of its meetings in the North during 1975-76. The Territorial Government endorses and encourages the practice of rotating meetings between Ottawa and the Territories. This is an indication of the understanding of the Chairman and members of the Committee of the need and desirability for more, "in the North" meetings of ACND Committees.

The Federal Interdepartmental Co-ordinating Committee (FICC) held quarterly meetings and a number of special meetings during the year. FICC is chaired by the Commissioner of the Yukon and membership is composed of the senior representative in the Yukon of each federal and crown agency, as well as a senior official of the Yukon Government. FICC is a standing Committee of the Advisory Committee on Northern Development. During the year in review FICC carried out the following broad objectives: the co-ordination of the activities of all Federal Government departments and agencies in Yukon; and the establishment of interdepartmental communication and continuing liaison between all government agencies in Yukon. It is anticipated that these objectives will be expanded to include the co-ordination of Territorial Government activities by establishing a sub-committee of FICC.

The Department of Secretary of State, represented by the Pacific Regional Director (Vancouver), assumed formal membership on FICC in September 1975. FICC members gave concurrence to a proposal by ACND that a senior secretariat officer attend regular FICC meetings as an observer. This arrangement has had positive results and has served to improve the level of communication and liaison between the two co-ordinating bodies.

The Directorate is also responsible for the administration of the Yukon Manpower Needs Committee and the Manpower Training Needs and Research Subcommittee. The Manpower Needs Committee is jointly chaired by the Director of Intergovernmental Affairs and the Director of Manpower (Federal) for Yukon.

During the past year the Directorate has broadened its role in the areas of intergovernmental relations and has established strong and positive links with other governments particularly with those jurisdictions bordering on the Yukon. The existing social and economic relationships and the many areas of interdependence created as a result of our geographic ties make it essential that the

Yukon Government maintain communication and close liaison with these neighbouring jurisdictions in matters of an intergovernmental nature which fall within the area of our jurisdictional responsibilities as a Territorial Government.

Plans for 1976-77

The Directorate will continue to be the focal point for the co-ordination of all activities and programs of an interdepartmental and intergovernmental nature. It will remain actively involved in the work of the Advisory Committee on Northern Development and will maintain liaison with ACND particularly with regard to northern development activities which affect the Yukon. Relationships with government jurisdictions bordering on the Yukon will be maintained and strengthened.

Long-term Plans

The Directorate will continue its policy to foster and maintain co-operative relationships between the Yukon Government and the various Departments of the Federal Government in all matters relating to the social and economic development of the Yukon and the well-being of its people. Intergovernmental relations with other jurisdictions in areas of interest and concern to the Yukon will continue to be developed and maintained.

Department of Treasury

Responsibilities

Management of the Yukon Consolidated Revenue Fund;
collection of all taxes and revenues;
supervision, control and direction of all matters related to the financial affairs of the Territory;
data centre and systems development for all government departments;
central purchasing, central stores, traffic and distribution; and
supervision of the Small Business Loans Program.

Review of 1975-76

Operation and maintenance expenditures are expected to increase from \$37,958,675 for 1974-75 to \$44,738,211 for 1975-76. This increase is attributable to increased material and labour costs in all areas of operation.

Revenue, recoveries and the operating deficit grant related to operation and maintenance are expected to increase from \$38,498,186 for 1974-75 to \$44,291,000 for 1975-76. Increases arose principally from higher recoveries as a result of higher expenditures; some increase in revenue due to volume; and an increase in the grant in lieu of taxes which forms a part of the deficit grant.

Capital and loan expenditures for 1975-76 will be \$14,056,000 greater than 1974-75. The \$29,844,400 to be expended is financed through cost-sharing agreements, a deficit grant, or by way of loans from the Federal Government.

Plans for 1976-77

New computer applications, including the YHCIP, are being studied. A centralized accounts payable system will be introduced and a central receiving system is being studied.

Long-term Plans

Plans include the:

- continued improvement of financial management techniques and the introduction of combined financial and operational management reporting;
- increased emphasis on data processing systems and adoption of additional applications; and
- development of materials management concept in relation to acquisition and utilization of materials.

Department of Education

Responsibilities

The Department of Education has three main areas of responsibility:

- elementary and secondary education as provided in the School Ordinance;
- vocational, technical and apprenticeship training for adults through the Vocational Branch; and
- developing and operating recreational programs through the Recreational Branch.

Elementary and Secondary Schools

Review of 1975-76

In September 1975 there was a total enrollment of 5,462 in grades Kindergarten through 12. This represents an approximate increase of three per cent over September 1974. Last enrollment figures indicate a drop in total enrollment of approximately one per cent from the September 1975 figures. This decrease in enrollment is largely the result of students leaving school after having completed the first semester.

Construction of new school facilities was completed at Mayo and Ross River. Mayo students moved into their new school following the Christmas break while Ross River students moved on March 29, 1976.

The Department of Education continued its assistance program relative to post-secondary education. Grants and bursaries totalling \$218,200 were provided to 219 Yukon students attending post-secondary institutions outside the Territory. Also 80 students were provided with a total of \$112,500 through the Canada Student Loans Program.

Off-campus university courses from the University of Alberta were once again offered in Whitehorse.

The Department of Education published a book entitled *Early Yukon Cultures* to be used in the grade four Social Studies program. The other Social Studies units were researched and are now ready for publication.

Continued efforts have been made in the French Program. All schools in Yukon are now in a position to offer French. The *En Avant* Program for Grades five, six and seven can be used in every school in which there is sufficient demand. At the Junior High level *Passeport Français* was selected for use. More work is being done before a Grade 11 and 12 course is selected to replace *Cour Moyen*.

The French Language Centre was completed and is now being utilized for adult French Language training.

Plans for 1976-77

The Department of Education will be conducting a post-secondary feasibility study to determine the most practical delivery system of post-secondary education in the Yukon.

There are no plans for construction of additional school facilities in the 1976-77 school year. It is anticipated that any enrollment increases can be accommodated by relocating available portable classrooms.

Long-term Plans

It will be necessary to plan for the anticipated enrollment increase at Haines Junction and Watson Lake.

Continued emphasis will be placed on the development of curriculum which is relevant to our particular situation.

Vocational/Industrial Training and Rehabilitation

Academic upgrading and pre-employment training courses are provided in Whitehorse at the Yukon Vocational Technical and Training Centre (YV TTC) and in the outlying communities. Both full-time day and night courses are available.

Academic Upgrading

Academic upgrading courses are offered to provide for three levels of requirements:

- basic literacy for people with a level of education up to grade four;
- basic education in mathematics and communication skills to a grade 10 level for people with a grade five to nine level of education; a program in life-skills is offered in conjunction with the upgrading; and
- BTSD 111 – for those who require only a few months of upgrading to train them to a grade 10 level in science, mathematics and communications.

Subject content is correlated with the particular trade individuals wish to enter. The class operates on a continuous intake and exit basis.

Community Courses

The major emphasis in the communities is on academic upgrading from illiteracy to the grade 10 level. Educational upgrading courses were provided in 12 communities in 1974 with an enrollment of about 192. The instructors were locally trained and supervised by a trained educator.

A program of Home Education, available to wives and mothers in the communities, covers home care, nutrition and budgeting.

Two management credit courses were provided. The total enrollment was 78, many of whom were on both courses.

In addition, a number of other courses were arranged and offered such as Defensive Driving and First Aid.

The Industrial Training Co-ordinator also is involved with working with industries in arrangements for training through the Canada Manpower and Immigration Training-in-Industry Programs.

Vocational Training

The YVTTTC provides 15 different pre-employment courses on a regular basis each year. Eleven are 10 months long, three are five months long (offered twice a year), and one course is four months long, also offered twice a year. Four of the pre-employment courses are trades courses and on successful completion provide one year credit towards an apprenticeship. The welding course which is non-apprenticeable qualifies a person to test for a British Columbia DPW No. 3 welding ticket; three courses are commercial courses, and the Nursing Assistance course provides a C.N.A. certificate recognized in the provinces. The remaining courses of Arts and Crafts, Food Services, Drafting, Heavy Equipment Operators and Basic Mining qualify for certificates of training received.

Additional Short Courses

Short courses ranging from one to six weeks are provided in response to recognized need and/or requests from industries and organizations. Some of the courses provided were Managerial Skills, Interpersonal Skills, Tractor Hydraulics, Power Shift Transmissions, Diesel Fuel Injection Systems, Diesel Engine Tune-up, Equipment Electrical and others.

Project Work

Emphasis is placed on practical training and as a result, a three-bedroom house has been constructed in Whitehorse by the Building Construction class and wired by the Electrical class. The house will be sold by tender.

The Heavy Equipment Operator class completed several major projects for the Department of Local Government under the direction of the Department of Highways and Public Works. This included the sewage lagoon at Porter Creek.

Apprenticeship and Tradesman Qualifications

There are 10 trades in the Yukon which are certifiable with either a Yukon Tradesmen's Qualification Certificate or an Interprovincial Red Seal endorsement.

In 1975-76, a total of 30 tradesmen wrote the examination for journeyman tradesman qualifications. Eighteen were successful and of the 18, four received the Interprovincial Red Seal. A total of 47 tradesmen have qualified for the Interprovincial Red Seal.

There were 11 apprentices who completed their apprenticeships and received the Yukon Tradesmen's Qualification Certificate and the Interprovincial Red Seal. There are 66 apprentices currently under contract.

To the end of March 31, 1976, 352 Tradesmen's Qualification Certificates have been issued in the 10 trades, and 28 people have completed their apprenticeships.

Responsibility for the provision of Vocational Night School courses was transferred to the City of Whitehorse.

Vocational courses were provided, as in the past, by the Department of Vocational Training. A total of 240 were enrolled in upgrading, updating and re-training courses.

Rehabilitation Services

The Rehabilitation Services Branch of the Department of Education continued to expand its services to the handicapped of the Yukon during 1975-76. More clients than ever were trained either on-the-job in Territorial Government Departments, or private industry, or at the Yukon Vocational Technical and Training Centre. Prosthetic devices were purchased for five clients during the fiscal year with services being provided through Edmonton and Vancouver. A Rehabilitation Centre was approved by the Executive Committee and is due for opening early in the 1976-77 fiscal year.

During this fiscal period, a total of 108 individuals were registered for Rehabilitation Services; of those, 52.7 per cent were diagnosed as suffering from mental disabilities, 45.3 per cent, diagnosed as being socially disabled, and .9 per cent suffered from more than one diagnosed disability. Most clients registered were given a complete medical assessment and many a psychiatric evaluation as well. Vocational assessments were performed for the Service in Calgary and by the Industrial Research Training Centre in Edmonton. At the end of the fiscal year, 17.5 per cent of the rehabilitation caseload were employed, 38 per cent were in training, and 10.1 per cent were in medical facilities. The balance of the caseload had either left the Yukon, or were under active assessment.

During 1976-77, the Yukon Rehabilitation Centre will be opened and programs directed towards its clientele will be developed. The present Training-on-the-Job Programs will be enlarged and improved and a Speech and Audiological Program begun in the Yukon.

Recreation Branch

Review of 1975-76

The Recreation and Amateur Sports Advisory Committee was restructured this year. The membership has been increased from seven to 12 members, each representative of one of the 12 electoral districts within the Territory.

The Recreation and Amateur Sports Advisory Committee had during this year a budget of \$120,000. This fund was allocated by the Committee to assist some 35 athletic and cultural associations in the furthering of their respective objectives.

A major concern and a primary emphasis of the Committee is the area of leadership development. The Committee is very concerned about the quality of training programs being conducted throughout the Territory. As a progressive effort in this area, the Committee has ordered the materials and films for the first level of the National Coaching Certification Program. The Committee is planning to implement this program during the fall of 1976.

The Recreation Branch itself, in supporting the Advisory Committee, has been involved in supporting a variety of instructor training programs throughout the Territory.

The Branch this summer operated a most successful aquatics program. Pools assisted by the Branch are located in Clinton Creek, Dawson, Mayo, Carmacks, Beaver Creek, Teslin and Watson Lake. This year a new pool was shipped to Carcross to the townspeople for assembly. This pool is to be operative for the summer of 1976.

March of 1976 was the time of the fourth Arctic Winter Games, hosted, this year, by the City of Schefferville, Quebec. The Yukon Contingent of 222 persons wholeheartedly enjoyed the opportunity of sampling French-Canadian culture and participating in the Games. They are now eagerly awaiting the next Arctic Winter Games in Hay River, Pine Point, NWT.

The Recreation Branch is providing the co-ordinating effort of evaluating and analysing the Territorial Government's role and involvement in future Arctic Winter Games. This evaluation when completed will be tabled in the Yukon Legislature.

Plans for 1976-77

The major task of the Branch for this year will be the development and implementation of a realistic comprehensive policy for the delivery of recreation services, by the Yukon Government.

Subsequently, a series of regulations regarding the Recreation Branch's involvement in the Government's delivery of recreation services will be developed creating a "new look" for 1976-77.

The Recreation and Amateur Sports Advisory Committee will continue to promote the concept and scrutinize the implementation of quality leadership programs.

Department of Territorial Secretary and Registrar General

Responsibilities

The Department is responsible for the following.

Registration Services – Services are available for: companies, motor vehicles, securities, vital statistics, business licences, co-operative associations, credit unions, partnerships, document registrations, motion pictures, insurance, professions, land titles, and societies.

Inspection Services – Services include those for: labour standards, liquor, steam boilers and elevators, motor vehicles, Yukon health care insurance plan, consumers' protection, and fair practices.

Motor Vehicles – Including transport public utilities, driving program, and Watson Lake, Haines Junction and Whitehorse weigh scales.

Workmen's Compensation

Public Administrator

Records Office

Queen's Printer, Yukon

Olympic and Western Canada Lottery, Yukon Division

Employment Liaison

Electrical Public Utilities Board – The primary operations are located at headquarters in Whitehorse, with agents located at Watson Lake, Haines Junction, Faro, Mayo, Dawson and weigh scale operators at Watson Lake, Whitehorse and Haines Junction on the Alaska Highway.

Review of 1975-76

Registration Services

Under the Business Licence Ordinance, a total of 490 licences were issued, 163 of these by the Yukon Territorial Agents.

Under the Insurance Licence Ordinance, 30 salesmen's licences were issued and eight salaried officials were licensed.

Under the Securities Ordinance, 14 prospectuses were filed. Three brokers licences, five salesmen licences and two security issuers' licences were granted.

Under the Societies Ordinance, 15 societies were incorporated, and 88 financial statements were registered.

Under the Companies Ordinance, 117 companies became new Yukon corporations, 85 were registered extra-territorially, a total of 202 new companies.

Under the Vital Statistics Ordinance, 414 births, 201 marriages and 128 deaths were recorded by the Registrar. Also indexed with Statistics Canada were three stillbirths, 22 adoptions, 12 name changes, 11 legitimizations, six corrections of original registrations, two delayed registrations of death, one delayed registration of marriage and 20 delayed registrations of birth.

During the fiscal year, 1,304 birth certificates and 170 marriage licences were issued at Whitehorse.

Under the Bills of Sale Ordinance, Conditional Sale Ordinance, Assignment of Book Debts Ordinance and Garage-men's Lien Ordinance, 4,962 documents were registered.

Under the Partnership Ordinance, 11 partnerships were registered.

Recorded in the Professional Register were licences issued to two chiropractors, seven dentists, seven dental therapists, 39 doctors, 89 lawyers, four optometrists and eight pharmacists.

Inspection Services

Inspection Services personnel travelled 20,000 miles during the year with 99 man-days on the road.

A total of 350 liquor inspections were performed with follow-up correspondence. Two liquor licences were suspended for violations of the Liquor Ordinance.

Ninety-three labour standards inspections were conducted during the year and a total of 216 wage complaints received. Enforcement of the Labour Standards Ordinance resulted in the collection of \$35,274.70 in outstanding wage entitlements.

The Workmen's Compensation Office handled 243 matters and \$32,632.47 in outstanding assessments was collected. Five inspections and investigations were conducted pursuant to the Accident Prevention Regulations.

Investigations and inspections conducted in respect of the Health Care Insurance Plan Ordinance totalled 382 and \$14,887.38 in outstanding premiums was collected.

Thirty-four matters were investigated under the Business Licence Ordinance, four under the Companies Ordinance and one under the Consumer Protection Ordinance.

Three matters were investigated pursuant to the Motor Vehicles Ordinance, and five pursuant to the Highway Sign Regulations.

Two hundred and sixteen steam boiler inspections were completed during the year along with 18 inspections pursuant to the Elevator and Fixed Conveyances Ordinance.

Twenty-five prosecutions were entered during the year, 11 under the Labour Standards Ordinance and 14 under the provisions of the Health Care Insurance Plan Ordinance.

Workmen's Compensation
During the calendar year 1975, 1,318 employers registered with the Workmen's Compensation Office.

There were 1,599 accidents reported and four fatal accidents. Fifty-seven claims were referred to the referee, and nine permanent disability awards were approved. Eight claimants were referred for rehabilitation services.

Public Administrator

The Public Administrator commenced the calendar year with 83 files to which were added 79 files consisting of 73 deceased estates, four patients and two missing persons. During the year files were closed in relation to 58 deceased estates and two missing persons, leaving a total of 102 files being maintained on December 31, 1975.

Motor Vehicles

Under the Motor Vehicles Ordinance, 28,592 licences, certificates and registrations were issued.

Weighscales at Watson Lake, Whitehorse and Haines Junction operated on a 24-hour basis. Each weighscale employed one supervisor, three operators and one permanent part-time operator. All vehicles of 20,000 lbs. or more gross vehicle weight are checked for legal weight, proper licencing and adherence to requirements under the fuel tax ordinance. Where necessary, licence plates or permits are issued. Further, where the vehicle is oversize or overweight a permit or penalty fee is assessed according to circumstances. Fuel emblems or one trip fuel permits are sold where applicable.

The total number of vehicles checked and recorded through the weighscales was 105,972.

Records Office

The Records Office handled over a million pieces of mail with 393,721 pieces received and 685,059 distributed. The number of files routed to Departments was 25,128.

Continuation of the Records Management Program saw 512 cubic feet of records transferred from Departments to the Records Centre and 494 cubic feet of records destroyed.

Queen's Printer

The Territorial Secretary provides various printing equipment making it possible to handle the volume of printing required by the Government. The Queen's Printer is responsible for the printing of all Ordinances, amendments to the Ordinances of the Yukon Territory, the printing of regulations, votes and proceedings of the Council Sessions and departmental requirements.

Olympic and Western Canada Lottery

The Western Canada Lottery profits for the 1975-76 year are as follows: In the AO Series, 12,387 tickets were sold; Non-profit agencies made \$10,658.66 and \$10,125.84 was made by the Government. In the AE Series, 7,282 tickets were sold with the agencies making \$5,637.09 and the Government making \$5,285.91. After the AE Series in mid-November, the lottery was switched to a bearer system. In the first draw, lottery 762, 6,000 tickets were sold with the amount of \$4,947 going to non-profit agencies, and \$4,053 going to the Government.

The Yukon first started selling Olympic tickets in July 1975. Commission cheques for the first five draws in which the Yukon did not participate, totalled \$3,241.50. In the 6th draw, 1,272 tickets were sold with \$730.80 going to the Government and \$414 going to the Banks and Financial Institutions. The commission cheque received was for \$1,230.50. In the 7th draw, 1,800 tickets were sold, with \$585 going to the Banks and Financial Institutions and \$1,035 going to the Government. The commission cheque was for \$1,153.

Employment Liaison

The responsibility of this position includes liaison with companies, industries and governments operating in the Yukon Territory in order to promote the training and employment of Yukon residents. Emphasis is placed on reducing the high unemployment rate amongst Yukon indigenous through referrals to employment and training opportunities.

Electrical Public Utilities Board

The Electrical Public Utilities Board has authority to approve rates and franchises with respect to public utilities operating in the Yukon Territory.

Land Titles

During the fiscal year 1975-76, there were 2,650 documents registered, including 80 plans and 982 Certificates of Title issued.

Department of Health, Welfare and Rehabilitation

Corrections Branch

Responsibilities

The Corrections Branch of the Department of Health, Welfare and Rehabilitation has the overall responsibility for providing adult (medium security) and juvenile (training home) institutions, also adult and juvenile probation services.

Goal – To develop and maintain a creditable and efficient correctional agency that truly reflects the desires, opinions and expectations of society towards an offender while fulfilling the legal obligations imposed by the courts.

Review of 1975–76

The numbers of adult male prisoners institutionalized shows a marked increase over the previous fiscal year. There was an increase of 37.7 per cent in actual criminal offences committed.

Medium Institution Admissions (Figures in Parentheses Represent 1974–75 Statistics)

| | | |
|----------------|-----|-------|
| Male | 298 | (222) |
| Female | 17 | (16) |
| Male remands | 98 | (105) |
| Female remands | 6 | (6) |
| Total | 419 | (349) |

Number of Offences Committed by Sentenced Inmates

| | | |
|--------|-----|-------|
| Male | 547 | (405) |
| Female | 48 | (27) |
| Total | 595 | (432) |

Yukon Juvenile Training Home

A permanent Juvenile Training home was completed and occupied by September, 1975. There proved to be no adaptability problems with the youngsters in the transition to the new and elaborate facilities. Previously, dilapidated old trailer units served as the training home, and in some instances were far superior to some of the charges' home accommodations. Because of the relative ease with which the juveniles and staff accepted the change, other program changes, which were desirable for some time, such as those mentioned in the 1975 fiscal report, reorganization of the classification and staging system and a greater flexibility of indoor programs were brought about.

Admissions

| | | |
|-------|----|------|
| Boys | 21 | (27) |
| Girls | 19 | (14) |

Probation

The plan to provide increased supervision to probationers in communities where there is no resident probation officer was carried out and statistics show that coverage was increased by some 40 per cent over the previous year.

One of the most obvious and ambitious developments that occurred during 1975–76 was the new program at the Yukon Juvenile Training Home, which now includes use of a Group Home operated by the Welfare Branch. This Group Home is a placement resource for adolescents who have completed the initial stages of the program at the Yukon Juvenile Training Home. The Group Home is a stage in the resocialization program for those juveniles for whom other appropriate domicile is unavailable. To ensure that the new program is responsive to the needs of these adolescents, a review board was established, which is comprised of representatives from the Yukon Juvenile Training Home, Welfare Branch, Probation, as well as Group Home parents and the Regional Psychologist. (Mention of the development of this program is made here as an example of the areas to which the ener-

gies of the Probation staff have been applied without a concomitant increase in caseload). Another probation officer now sits as part of the institutional classification committee at the Whitehorse Correctional Institution, in order to assist in the release planning of inmates who are approaching their release date. Once again, this does not result in an increase on the caseload statistics, but it is a very valuable development.

Probation Statistics

Adult

| | Male | Female |
|---|-----------|---------|
| Probationers on caseload April 1, 1975 | 205 (183) | 35 (22) |
| New cases to March 31, 1976 | 478 (231) | 48 (72) |
| Total supervised during period under review | 683 (581) | 83 (94) |
| Probationers under supervision March 31, 1976 | 282 (205) | 25 (35) |

Juvenile

| | | |
|---|-----------|---------|
| Probationers on caseload April 1, 1975 | 42 (38) | 11 (8) |
| New cases to March 31, 1976 | 80 (87) | 25 (31) |
| Total supervised during period under review | 122 (125) | 36 (39) |
| Probationers under supervision March 31, 1976 | 36 (42) | 18 (11) |

Long-term Plans

Immediate priorities and long-term plans for this Branch are to establish resident probation officers in those communities that are now serviced by visiting probation officers.

Alcohol and Drug Services

Responsibilities

Alcohol and Drug Services is responsible for the development, management and co-ordination of programs to combat alcohol and drug problems in the Yukon.

Personnel from Alcohol and Drug Services co-operate with other territorial and federal departments in the Impaired Driver Re-education Program, and Yukon Check-Stop, the public information program on drinking and driving prevention.

Alcohol and Drug Services carries the major co-ordinating and treatment responsibilities for Employee Alcoholism Program of the Territorial Government. In addition to servicing the YTG's employee alcoholism programs, Alcohol and Drug Services provided special services to the following federal departments: DPW, the Department of Indian Affairs and Northern Development and Health and Welfare Canada.

Other continuing programs are: out-patient treatment services; public information and referral system; educational services; monthly publication of *Connection*, a newsletter; consultations with private and government social and health organizations; and the co-ordination of alcoholism programs in Yukon.

Review of 1975-76

Early in 1975 a situational analysis study titled *Alcohol Consumption in the Yukon* was completed and published by Alcohol and Drug Services. This study provided the basic data on which to draft *Comprehensive Alcohol-Related Problem Prevention Policy* for the Yukon. That policy was approved and supported by the Government and the Legislative Assembly and is now being operationalized.

During 1975-76, Alcohol and Drug Services was very pleased to be able to help "Crossroads" develop their program, and with the co-operation of the Yukon Housing Corporation, provide them with permanent accommodations. Crossroads, a residential treatment centre for alcoholics, is operated by a non-profit society and supported in part by a grant from Alcohol and Drug Services.

A fourth major goal achieved in 1975-76, was the starting of a Detoxification Centre and program. This Centre, located at 502 Hoge Street in Whitehorse, provides a safe and controlled setting to supervise the withdrawal process of intoxicated persons and the first stage of an alcoholism treatment program.

In January 1976, Alcohol and Drug Services introduced its new Professional Development and Training Program. The first course offered had an enrollment of 26 persons from the health and social service fields in the Whitehorse area. The major emphasis of the first course was on "The Counselling of Persons with Alcohol-Related Problems".

Plans for 1976-77

The major task of 1976-77 will be to increase Alcohol and Drug Services' functions in communities outside Whitehorse. This will be accomplished through the following means:

- the appointment of two field workers, who will service all Yukon Communities on a regularly scheduled basis;
- the development of a Community Detoxification and Counselling System to serve all communities in Yukon.

This system will be implemented in two communities, outside Whitehorse, 1976-77, and the remainder in 1977-78;

- the provision of professional development courses for people working in small communities in Yukon, e.g. Social Workers, Probation Officers, Outreach Workers, Health Workers, Ministers, etc.

Some other programs to receive major emphasis in 1976-77 will be the expansion of the Employee Alcoholism Programs in the Yukon and the development of a public information program, which will be aimed at decreasing consumption of alcohol and the prevention of alcohol-related problems.

Health Services Branch

Responsibilities

The Health Services Branch administers the delivery of those programs which by statutory authority provide health services to residents of the Territory. These programs naturally divide themselves into three groups, these being:

General Health Services

A diversity of programs directed mainly towards the preventive aspects of health care. They include disease control, mental health, inspection services, public health, health education, school dental, and travel for medical and alcohol drug abuse therapy. In some of these programs the expertise and assistance of the Medical Services Branch, Health & Welfare Canada is essential; such cases require a joint venture operation.

Yukon Health Insurance Plan

More commonly known as "Medicare", the plan provides residents with insured medical services without geographic restriction. The plan conforms with the Medical Care Act (Canada) and is cost-shared by the Federal Government under that legislation. Premium contributions by residents provide the Yukon Territorial Government shared program cost.

Yukon Hospital Insurance Services (YHIS)

The plan provides in-patient and out-patient care for residents and as with health care insurance is not subject to geographic restrictions. This plan also conforms to the federal statute – Hospital Insurance & Diagnostic Services Act (Canada) – and is cost-shared by the Federal Government under the terms of that legislation. Yukon Territorial Government funding is provided from general revenue.

Review of 1975–76

A slight decrease in utilization in both in-patient and out-patient services for YHIS was recorded, but this was offset by increases in charges made by hospitals outside the Yukon. Arrangements were completed whereby the federal hospitals in the Territory will become budget review operations effective April 1, 1976. Otherwise, utilization increases were consistent with population growth.

Long-term Plans

Co-ordinators have been named by both the Federal and Territorial Governments for the transfer of health services to the latter. A target date of April 1, 1977 has been set.

The Federal Government has given notice of its intention to terminate the cost-sharing arrangements under the Hospital Insurance & Diagnostic Services Act (Canada) and Health Ministers are developing alternative arrangements which by broadening the field of services to be cost-shared would at the same time restrain the demands on the high cost services. Changes in either of the major plans or other health services is not contemplated until the new cost-sharing arrangements are finalized.

Yukon Hospital Insurance Services
See tables 1 to 3.

Table 1. *Services*

| | 1975 | 1974 | Increase (decrease) |
|-------------------------------|--------|--------|------------------------|
| <i>In-Patients</i> | | | |
| Patient days | 26,880 | 28,098 | (1,218) |
| Separations | 3,929 | 4,266 | (337) |
| Average length of stay (days) | 6.8 | 6.5 | .3 |
| <i>Newborn</i> | | | |
| Patient days | 3,217 | 2,418 | 799 |
| Separations | 567 | 478 | 89 |
| Average length of stay (days) | 5.7 | 5.1 | .6 |
| <i>Out-Patients</i> | | | |
| Diagnostic | 8,842 | 10,646 | (1,804) |
| Accident | 4,099 | 2,960 | 1,139 |
| Accident third party | 92 | 52 | 40 |
| Total | 13,033 | 13,658 | 625 |

Table 2. *Costs*

| | 1975 | 1974 | Increase (decrease) |
|------------------------|-------------|-------------|------------------------|
| In-patient services | \$1,926,351 | \$1,826,259 | \$100,092 |
| Out-patient services | 190,277 | 176,259 | 14,018 |
| Administration | 67,903 | 58,533 | 9,370 |
| Third party recoveries | (4,326) | (9,081) | 4,755 |
| Total | \$2,180,205 | \$2,051,970 | \$128,235 |
| Per capita cost | \$99.10 | \$97.71 | \$1.39 |

Table 3. *Yukon Health Care Insurance Plan: Costs*

| | 1975 | 1974 | Increase (decrease) |
|--------------------------------|-------------|-------------|------------------------|
| <i>Insured Services</i> | | | |
| Payments to practitioners | \$1,516,569 | \$1,333,565 | \$183,004 |
| Reimbursement of residents | 9,610 | 7,881 | 1,729 |
| Payments to dentists | 13,063 | 11,810 | 1,253 |
| Total cost of insured services | 1,539,242 | 1,353,256 | 185,986 |
| Administration | 134,352 | 131,966 | 2,386 |
| Total costs | \$1,673,594 | \$1,485,222 | \$188,372 |
| Per capita cost | \$73.73 | \$70.24 | \$3.49 |

Social Welfare Branch

Responsibilities

The Social Assistance and Child Welfare Ordinances provide the statutory basis upon which a diversified and comprehensive range of services and programs has been developed, and is administered by the Social Welfare Branch of the Department of Health, Welfare and Rehabilitation throughout the Yukon Territory.

These services consist of Social Assistance, including Territorial Supplementary Allowance, services for the elderly, family service, child care and protection of children, services to unmarried parents, and the operation of various geriatric and child care facilities. The Branch also provides funds for grants to community-based social service agencies.

A full range of services is available to residents of the Yukon with the exception of Social Assistance to persons of Indian Status, which continues to be administered by the Indian Affairs Branch of the Federal Department of Indian Affairs and Northern Development.

Organization

The Branch is organized into five divisions. Two are geographical in nature, serving respectively, Whitehorse (Metro) and Yukon outside of Whitehorse (Field Services). Special Placements is responsible for adoptions, foster home studies, group homes, and placement of children. Various specialized resources both within and outside the Yukon. Geriatric Services Division is responsible for the operation of senior citizens' facilities, and for case work services for the aged. The Administrative Services Division provides financial, statistical, and general administrative support services for all Branch operations.

The Head Office of the Branch is located in Whitehorse. Field offices located in Dawson, Mayo, Faro and Watson Lake, together with two highway workers operating from the head office, provide coverage for all the populated areas of the Territory.

Total permanent staff complement is 71, one-quarter of which includes institutional employees but does not include fosterparents of the child care facilities who operate under contract on a per diem basis.

Facilities

As supportive resources essential to the successful functioning of Welfare programs, the Branch owns and operates a variety of homes and institutions for children in care and for senior citizens. The operation of these facilities is cost-shared by the Federal Government under the provisions of the Canada Assistance Plan.

The Geriatric facilities consist of a combined nursing home and senior citizens' home in Dawson, and a senior citizens' home with integral nursing care wing in the Riverdale subdivision of Whitehorse. These facilities provide the combination of residential accommodation (18 beds), domiciliary care (26 beds), and personal care (24 beds) for a total capacity of 68 senior citizens.

Negotiations have been completed to have the senior citizens' home with bachelor style apartment units in downtown Whitehorse transferred to the Yukon Housing Corporation for administration.

The Branch also administers 12 beds reserved in the Whitehorse General Hospital which is owned and operated by Northern Health Services of Health and Welfare Canada. These beds have been designated as "special care" or "extended care" beds for those who require nursing care beyond the capacity and capabilities of the Welfare institutions, but who do not require acute or convalescent care and are therefore, ineligible for Hospital Insurance Services.

At the end of the year, seven child care facilities are being operated by the Branch. In Whitehorse there is one family-type group home, an adolescent group home, a home for physically and/or mentally handicapped children and a Receiving/Assessment Centre for assessment as well as short-term and emergency placements for children. In addition, there are group/receiving homes in Dawson, Mayo and Watson Lake. The Branch also contracts the services of one additional group home in Whitehorse, owned and operated by the Sisters of Providence with a capacity for and additional 12 children.

Review of 1975-76

The various programs and services of the Social Welfare Branch are designed to provide care and assistance to the elderly, alleviate poverty and distress among families and individuals; to provide protection and care for children endangered by abuse or neglect; and to contribute towards the social and economic well-being of all people of the Yukon by recognizing and promoting the family and community as the nucleus of our social structure, values and life styles.

A major structural change during the past year has been the separation of Geriatric Services from the Metro Division to be incorporated into the total service to the elderly throughout the Yukon.

Continuing efforts to locate appropriate foster families for children in care have involved a more personal approach over the past year as staff members have met with a number of Whitehorse Service groups, the focus of which has been twofold - to make known the Branch's ongoing and urgent need for foster homes and to provide information to the general public about the program. Foster parent meetings and a foster parent newsletter were initiated by Branch staff this year to provide additional communication and information.

To further improve our service to children, the Branch has supported the creation of the National Adoption Desk and is actively using this exchange service in an effort to make possible the placement of older and special needs children in permanent homes.

This past year has also produced very real efforts at intensifying and expanding our program to provide teenagers with more meaningful service. The Social Welfare Branch, in conjunction with the Department of Corrections, Mental Health Service, and the Department of Education assisted in the development of a new adolescent socialization program. This is now in operation at the Juvenile Training Centre, a Corrections Branch facility. The Social Welfare Branch has also converted an existing group home into a unit which provides a community based extension of the new program. It is hoped that this more specialized home, opened in February 1976 and now staffed with

well-experienced and trained group home parents, will more adequately meet the needs of some of the Yukon's troubled teenagers.

In keeping with the overall objectives of the Branch, the Staff Development program continued through the provision of seminars and workshops designed to improve standards of practice and enhance communication with other community groups and organizations.

Long-term Plans

With changing social and economic conditions the Branch must continue to plan so that programs, services and supportive resources are maintained, reorganized and expanded accordingly. The Branch recognizes and continues to promote and encourage the development of preventive services with the aim of improving and enhancing the functioning of the individual in his community.

Table 4. *Caseload Activities 1975-76*

| Category of service | Cases as of April 1 1975 | Cases opened during fiscal year | Cases closed during fiscal year | Total caseload carried during fiscal year | | % total caseload increase (decrease) | Actual caseload March 31, 1976 | Actual caseload March 31, 1975 | % actual caseload increase (decrease) | Number of individuals involved during fiscal year | | % individual increase (decrease) |
|----------------------------------|--------------------------|---------------------------------|---------------------------------|---|-----------|--------------------------------------|--------------------------------|--------------------------------|---------------------------------------|---|-----------|----------------------------------|
| | | | | (1975/76) | (1974/75) | | | | | (1975/75) | (1974/75) | |
| Children in care | 256 | 124 | 151 | 380 | 421 | (9.7) | 229 | 256 | (10.5) | 380 | 421 | (9.7) |
| Child protection | 94 | 35 | 58 | 129 | 162 | (20.4) | 71 | 94 | (24.5) | 565 | 786 | (28.1) |
| Foster homes approved | 88 | 11 | 29 | 99 | 109 | (9.2) | 70 | 88 | (20.4) | 198 | 218 | (9.2) |
| Adoption services | 64 | 64 | 38 | 128 | 124 | 3.2 | 90 | 64 | 40.6 | 297 | 332 | (10.5) |
| Unmarried parents | 8 | 17 | 20 | 25 | 23 | 8.7 | 5 | 8 | (37.5) | 29 | 28 | 3.6 |
| Family service | 183 | 226 | 206 | 409 | 351 | 16.5 | 203 | 183 | 10.9 | 1261 | 1261 | — |
| <i>Public Assistance</i> | | | | | | | | | | | | |
| Social assistance | 400 | 1387 | 1391 | 1787 | 1860 | (3.9) | 396 | 400 | (1.0) | 2726 | 2963 | (8.0) |
| <i>Geriatric Care</i> | | | | | | | | | | | | |
| Nursing & senior citizens' homes | 75 | 28 | 34 | 103 | 87 | 18.4 | 69 | 75 | (8.0) | 103 | 87 | 18.4 |
| Total | 1168 | 1892 | 1927 | 3060 | 3137 | (2.5) | 1133 | 1168 | (3.0) | 5559 | 6096 | (8.8) |

Table 5. *Total Expenditure 1974-75/1975-76 Comparative Expenditure Data*

| | Total expenditure | Total case-load carried during fiscal year | Total recipients carried during fiscal year | Per case cost | Per recipient cost | Per capita cost | Cases per 1,000 population |
|----------------------------|-------------------|--|---|---------------|--------------------|-----------------|----------------------------|
| 1975-76 | \$2,318,602 | 3,060 | 5,559 | \$757 | \$ 417 | \$102.59 | 135 |
| 1974-75 | \$2,275,474 | 3,137 | 6,096 | \$725 | \$ 373 | \$108.36 | 149 |
| <i>Increase (Decrease)</i> | \$ 43,128 | (77) | (537) | \$ 32 | \$ 44 | \$ (5.77) | (14) |
| Percentage | 1.9% | (2.5%) | (8.8%) | 4.4% | 11.8% | (5.3%) | (9.4%) |

Population base: 1974/75, 21,000; 1975/76, 22,600.

Gas/Plumbing – Twenty-five plumbing permits were issued in 1975, for a total of \$1,203.00. Six gas permits were issued in 1975, for a total of \$87.00. One hundred and sixty-one inspections were made in 1975.

Ambulance – Total ambulance runs for 1975 were: Carmacks 33; Dawson City 27; Faro 51; Watson Lake 97; Whitehorse 761; Beaver Creek 12; Destruction Bay 11; Haines Junction 32; Teslin 22.

Emergency Measures Organization – Operational Plans have now been produced for all Yukon Municipalities, namely: Whitehorse, Dawson, Faro, Haines Junction, Mayo, Teslin, Watson Lake, United Keno Hill Mines Ltd. Two exercises were held during 1975 to evaluate the Whitehorse City EMO when faced with a major "Air Disaster" and a "Power Failure". January 5, 1975 the Yukon Disaster Committee co-ordinated the rescue of 34 stranded motorists from the Haines Highway under severe climatic conditions. Airport Disaster Kits are now located at all major Yukon airports or in nearby storage areas.

Assessment Branch

Responsibilities

To provide real property assessment services to all taxing authorities in the Yukon Territory;

Preparation of assessment rolls for the Municipalities and the Government of the Yukon Territory;

Render assistance to the Territorial Tax Collector;

Participate in Court of Revision and Appeal Hearings;

Develop real property appraisals.

Review of 1975–76

Assessment figures for 1976 and corresponding 1975 figures, the following is a summary of total assessed:

| | (1976) | (1975) |
|--------------------|--------------|--------------|
| City of Whitehorse | \$77,427,740 | \$69,747,760 |
| Dawson City | 2,998,660 | 2,679,400 |
| Faro | 7,394,050 | 6,232,160 |
| Commissioner | 34,695,660 | 32,854,080 |

Community Planning and Land Disposal Services

Responsibilities

The planning of Yukon Communities to permit orderly economic development;

The development of serviced land to fulfill the needs of Yukon communities;

The sale, lease or other disposition of lands under the administration, control and management of the Commissioner of the Yukon Territory.

Review of 1975–76

The Territorial Government has received administration and control from the Federal Government for blocks of land surrounding the communities of Beaver Creek, Carcross, Carmacks, Destruction Bay, Teslin and Watson Lake. These transfers substantially increase the amount of land under direct Territorial control.

Land development projects in the final stage

Single family residential: Porter Creek, 47 lots; Riverdale, 167 lots.

Mobile home residential: Porter Creek, 52 lots.

Duplex residential: Riverdale, 29 sites.

Multiple dwelling: Riverdale, 1 site.

Industrial: Carmacks, 6 lots.

The sum of \$921,762 was received through land disposals in 1975–76. This included the sale of 322 lots in Whitehorse and 44 lots in outlying communities.

Plans for 1976–77

The Land Use planning advisor will present recommendations for a management system which will utilize an orderly planning process to solve existing resource management problems.

Additional land developments are in the planning stages for Crestview – single family residential; Haines Junction – mobile homes and industrial; Porter Creek – single family residential, multiple dwellings, mobile homes and industrial; as well as a small holding development within the City of Whitehorse. The Riverdale subdivision development and the industrial subdivision in Watson Lake are to be completed.

In order to increase the level of services provided by the Lands Branch, the staff will be supplemented by the addition of an administrative position, a lands inspector and a draftsman.

Long-term Plans

To continue the program of preparing regional and community plans and zoning control legislation for the Yukon;

To establish Land Disposal policies by doing so, to administer the disposition of lands to permit the orderly efficient and economic development of all areas of the Yukon.

Department of Tourism, Conservation and Information Services

Tourism and Information Branch

Responsibilities

The Branch is responsible for promoting travel to the Yukon Territory and encouraging the development of tourist attractions and facilities within the Territory. In addition, it is responsible for the government's public information programming.

Review of 1975–76

Visitors to the Yukon in the calendar year 1975 numbered 340,108. This represents a 4.5 per cent increase over 1974. Direct expenditures by these visitors has been calculated at \$27,338,245. However, since no new data has been developed recently regarding visitor expenditures, this dollar figure is merely a projection of those used in previous years and does not consider changing spending habits, price increases and so on.

In 1975, 79.5 per cent of all visitors entered the Territory during the May through September period. Total people travelling the highway during this peak season decreased by 1.6 per cent while overall highway traffic over the entire



Fishing is a popular sport in Yukon with its abundance of fish filled lakes and rivers

Year increased by 2.9 per cent. There was a considerable increase, (11.9 per cent), in the number of visitors arriving on the White Pass and Yukon Railway. There was also an increase in the number of arrivals to 61,568 persons, an increase of 5.7 per cent.

Writers, film crews and travel agents were hosted by the Branch at various times throughout the year. The hospitality training course "Yukon Host", operated in conjunction with the Yukon Visitors Association, continued in 1975 and it was attended by over 400 representatives of the hospitality industry in four communities.

A major visitor exit survey was carried out in the summer of 1975, in conjunction with Parks Canada. Results of this survey should be available by June 1976.

Yukon House in Vancouver experienced significant increases in the number of inquiries processed respecting employment and business opportunities. This service provides information about the Yukon from its location at 567 Hornby Street in Vancouver, as well as engaging in a number of Yukon promotions and media liaison.

Visitor information centres were open throughout the summer at Watson Lake, Beaver Creek, Haines Junction and Dawson in the Yukon and the Branch shared in the cost of operating the Chamber of Commerce Information Centre in Whitehorse.

Information Services is now providing complete public information programming to user departments. Services provided include production of audio-visual messages for use on Anikinfo. The photo section has developed a considerably improved photo library and is continuing its efforts in maintaining this service.

Plans for 1976-77

A tourism economic impact study will be carried out in 1976;

Various research and planning projects leading to a tourism conceptual development plan will be implemented;

Territorial Parks system planning will continue;

Tourism literature in French and English will be revised and updated;

Development of tourism in all regions of the Yukon will be emphasized;

Development of the photo and information sections will continue; and

An Enquiry Centre in new Administration Buildings will be established.

Long-term Plans

Continued advertising and promotion to stimulate travel to the Yukon will be undertaken; programs will be designed to assist the development of the Territory's tourist facilities and services such as improving territorial parks, expanding existing campgrounds and providing adequate public communications.

Game Branch

Responsibilities

This Branch is responsible for the administration and enforcement of the Game Ordinance, Fur Export Ordinance, Brands Ordinance, Pounds Ordinance, Migratory Birds Convention Act, Canada Wildlife Act, International Agreement on the Conservation of Polar Bears, Game Export Act and the Freshwater Fishery Regulations, as well as for conducting programs that are necessary for proper wildlife resource management.

Review of 1975-76

A regulations officer was hired to oversee all enforcement matters of the Game Branch and to supervise the Conservation Officers. Because of a temporary freeze on all hiring, the two new biologist positions (fur-bearer and two researchers big game research) were not filled during the 1975-76 fiscal year, but will be hired at the beginning of the 1976-77 fiscal year.

Big Game inventory work was continued and covered Game Management Zone II (Logan Mountains in southeastern Yukon). Routine annual surveys were also carried out to assess the status of the remnant goat population in south-central Yukon, to keep track of an introduced elk herd, and to monitor the performance of the moose population in the Nisutlin River floodplain, a special study area of the Game Branch. Hunter check stations were maintained during the antlerless moose season to obtain reproductive tracts, jaws and other relevant biological information of moose.

The trophies of all sheep, goats and grizzlies shot in the Yukon during the 1975-76 season were turned in to the Game Branch for evaluation by biologists to monitor the trends of these populations in various game management zones in the Yukon. Detailed questionnaires were sent to all hunters at the end of the hunting season in order to establish realistic harvest statistics.

The Game Branch also began to do preliminary biological surveys of some of the Yukon's major river valleys. Some of these have potential for hydro-electric power developments. During the 1975-76 fiscal year the Pelly-MacMillan River and the Nisutlin River were surveyed.

The harvest of big game during the 1975-76 season was comparable to that of 1974-75, with the take of grizzly bears being slightly lower.

There was a drop in fur harvest because of the scarcity of lynx, which appears to be at the low point of its ten-year cycle.

Waterfowl research was initiated in the Old Crow Flats area. The temporary crew, working out of a camp in the Old Crow Flats, also did regular patrols of the Yukon's arctic coast.

A Hunter's Safety Training Course, which was initiated in 1974-75, was enlarged upon, and was taught in a number of Yukon schools.

Plans for 1976-77

Two new biologist positions will be filled this year, one for fish and one for habitat. The northern Yukon will again be serviced on a temporary basis from a research camp in the Old Crow Flats.

Biological work will continue on the waterfowl of the Old Crow Flats area. Big Game inventories will be carried out in the central Yukon (Pelly Mountains). Research will begin on the impact of the Dempster Highway on the Porcupine caribou herd, as well as on the moose population of the Nisutlin River Valley. Monitoring of a few game populations, which are at a very low level (goat, elk), will continue.

The Hunter Safety Training Course will be continued and attempts will be made to offer it in all Yukon schools. The analyses of hunters' questionnaires, as well as the evaluation of trophies taken (skulls of sheep, goat, grizzlies), will continue since it is an essential prerequisite for proper management of these species.

Long-term Plans

Game surveys will continue until a complete inventory of the Yukon's wildlife resource has been made. Stricter hunting regulations can be anticipated in certain areas of the southern Yukon where intensive hunting pressure has depleted certain game populations.

More emphasis will be placed on public education programs, and regular training courses will be held for students, hunters and trappers. For this reason the Game Branch has reclassified one of its Conservation Officers to a full-time education and public relations officer.

It is hoped that close co-operation can be achieved with the Federal Government in the establishment of "special use areas" for wildlife. Such areas consist of critical winter ranges for big game and waterfowl staging areas which are extremely important to the conservation of Yukon's wildlife, and on which wildlife considerations must be given priority over other types of land use.

Library Services Branch

Responsibilities

To provide library services to the public and to schools throughout the Yukon, and to provide archival services under the authority of the Archives Ordinance.

Review of 1975-76

With a stock of approximately 95,000 catalogued books the Library Services Branch served 74 outlets in various Yukon communities. Outlets range from conventional public and school libraries to deposit collections in Band Council Offices, adult education classes, institutions and day care centres. On a rotating basis 46,320 books were shipped to these communities. The cataloguing and processing of 30,201 items of library materials (new books, added copies, paperbacks and audio-visual materials) were completed. The members of the Whitehorse Public Library (central and largest Branch) borrowed 70,240 books during the year. Media Services Division distributed 8,951 16mm films throughout the Territory. Yukon Archives dealt with 3,456 research inquiries.

The Art Gallery of the Whitehorse Public Library held major exhibitions of Yukon and Western Canadian Artists, including Moosoroma, a lighthearted spoof of Northern Art, displayed during the annual Whitehorse Sourdough Rendez-vous. Access to books in many languages was made possible through participation in the Multilingual Bibliographic Service Program offered by the National Library. In co-operation with the Yukon Teachers' Federation a professional education reference collection was established in Whitehorse, with a printed accessions catalogue sent to all schools. A newsletter entitled *Yukon Library News* was begun as a means of informing public and school librarians of library activities throughout the Yukon.

Through co-operative funding of the Town of Faro and the Library Services Branch, a Community Services Librarian project was initiated in Faro. In effect, the Faro Library Board and library staff operate the community use of the school, as well as more traditional library activities. This use includes co-ordination of adult and vocational education programs, special interest group use of school facilities, and library public information programming. New Branch Library facilities were opened in Haines Junction and the level of Library Board involvement enhanced by changing the structure to an appointed citizens' committee responsible to the Haines Junction Local Improvement District Board. Assistance to the Resources Centre of the Yukon Indian Centre was offered through a three-month training program for two of the Centre's employees. Support through major financing was given to the Boreal Institute, University of Alberta, for the publication of *Yukon Bibliography, Update, 1971-73*. Public programming for the Yukon Archives included an audio-visual lecture series on Yukon history, parts of which were broadcast throughout the Yukon by CBC; a summer photo-history display in the history of Whitehorse; the circulation of another photo-history display, Northern Wheeler Studio, and Yukon film programs to various Yukon communities. Major Archives acquisitions were White Pass and Yukon Route railroad construction records and the municipal records of the City of Whitehorse. A cataloguing system was designed to organize an expanding collection of approximately 500 maps. A unique 38 volume visual finding aid was prepared for 6,000 of the pictures in the photographic collection. This research aid used a donated Xerox 100 to copy both the photograph and the subject card on one page. Complete sets were deposited in several Pacific Northwest institutions having significant collections of Yukon material, as well as in free locations in the Yukon.

Regulations were approved pursuant to the Archives Ordinance which allow for more liberal access to exempted and current government records. Since the Archives is custodian of the permanent records of the Territorial Government, considerable staff liaison time with other government departments and the Records Office was devoted to the development and operation of the records management program.

Long-term Plans

The Branch's long-term plans are: to work towards providing public and school library service at the level of accepted standards of library service; to co-operate, through the agency of the Yukon Archives, in the development of a territorial government system of records management for current, non-current, and permanent government records and to acquire and maintain a collection of the history of the Yukon as recorded in non-governmental sources.

Budget limitations are causing a more strict rationalization of activities in terms of defined objectives. In general, the objectives are to alter and increase utilization of the library system and archives facilities in terms of specific community needs; and to strengthen the already integrated system of services by emphasizing such roles for all types of services outlets such as community information centres, community cultural centres, community research and teaching centres, and community communications centres.

Department of Legal Affairs

Responsibilities

The Department is responsible for the administration of justice throughout the Territory.

The Yukon Territorial court system includes the Yukon Court of Appeal, the Supreme Court and the Magistrate's Court, located in Whitehorse; and Justices of the Peace Courts located at most of the outlying communities in the Territory. The Magistrate's Court travels on circuit as required. Small Debt Officials are located in Whitehorse, Dawson, Watson Lake, Faro, Beaver Creek and Haines Junction and have jurisdiction up to \$500. Juvenile offenders are dealt with pursuant to the Juvenile Delinquents Act, with lay juvenile judges located at Dawson and Whitehorse. The Federal Department of Justice maintains a Crown Prosecutor's Office in Whitehorse for the prosecution of Criminal Code and federal offences.

The Department supervises the drafting of legal documents, ordinances, regulations, and provides legal advice and services to the Commissioner, the Executive Committee, the Legislative Assembly and individual departments of the Government of the Territory.

Review of 1975-76

The Community Legal Education Program continued throughout the year in conjunction with circuit court visits to outlying communities. A Court Worker Program was commenced during this year, funded through cost-sharing with the Federal Government. The court worker accompanies the circuit court.

Compensation for Victims of Crime Ordinance was passed in Council and a cost-sharing agreement with the Federal Government was signed. A Legal Aid Ordinance was passed by Council and negotiations continued during the year with the Federal Government regarding a cost-sharing agreement. Criminal legal aid was granted to 135 persons during the year.

Plans for 1976-77

The introduction of a comprehensive Legal Aid Plan is planned.

Long-term Plans

The establishment of an additional fully staffed Magistrate's Court;

A feasibility engineering study on a Yukon Law Courts Building; and

A study in respect of recording evidence by sound apparatus.

Department of Highways and Public Works

Responsibilities

To maintain and improve all highways and roads within the Yukon Territory, with the exception of municipal roads, to established standards; to co-ordinate federally-financed or cost-shared road maintenance and reconstruction programs with the appropriate branches of the Department of Indian Affairs and Northern Development under the Federal-Territorial Engineering Services Agreement; and to co-ordinate with the Federal Department of Public Works (DPW) matters pertaining to the maintenance of the Yukon Section of the Alaska Highway and the Yukon and BC Sections of the Haines Road falling under the Alaska Highway Maintenance Agreements between DPW and the Commissioner;

To maintain and improve all buildings owned by the Territorial Government and to design or have designed all new buildings for the Territory;

To plan, design and implement construction of water and sewer and sewage treatment facilities for Yukon communities – excluding municipalities – in consultation with the Territorial Department of Local Government. When required, to assist municipalities in their capital and O&M programs;

To maintain all airstrips and airports in the Yukon with the exception of major airports maintained by MOT;

To operate ferries at Dawson and Ross River;

To provide professional engineering services and advice to the Commissioner and all Territorial departments.

Review of 1975–76

The Department maintained 1,894.1 miles of all-weather roads on a year-round basis and in addition, 678.9 miles of roads were maintained during the summer months only. As in previous years the dust control program was continued with the application of Calcium Chloride to those sections of roads where the traffic density is 250 vehicles per day or more during the summer months. Cost of the dust control program totalled \$1,505,000; 856 miles of road were covered.

The 55 ton *George Black* ferry crossing the Yukon River at Dawson and serving tourist and mining traffic carried, between launching on May 21, 1975 to dry docking on October 28, 1975, a total of 32,444 vehicles and 92,709 passengers. This compares to 24,440 vehicles and 86,362 passengers for the 1974 season. As in previous years an ice bridge and a skyline (for moving mining products) were operated during the winter months at Dawson. The cable ferry at Ross River over the Pelly River was operated during the summer months to serve mainly mining exploration traffic along the North Canol Road. With the exception of the Whitehorse and Watson Lake MOT airports, all other airports and airstrips in the Yukon were maintained by the Department. Highway maintenance expenditures totalled approximately \$10.6 million.

The Highway Construction Section completed a number of projects during the year which included road reconstruction at Stewart Crossing-Dawson Road Mile 107.6 to 110.6, pavement construction of the South Access Road in Whitehorse, major culvert installation on the Nahanni Range Road and miscellaneous minor jobs. Pre-Engineering survey work was carried out on the North Canol Road commencing at Ross River and for a distance of approximately 70 miles. Work included alignment, profile and cross-sectioning. Other Pre-Engineering work included surveys and collection of data for proposed 1976–77 projects. Crushing and stockpiling along the first seven miles of the Campbell Highway (from Watson Lake to the airport) was completed in preparation for paving in 1976–77. The Highway Construction Sec-

tion was also involved in the construction of the new Robert Campbell Bridge over the Yukon River in Whitehorse. The main responsibility, however, rested with the Federal Department of Public Works who did the design and supervision. Only the removal of the temporary bridge remains to be completed in 1976–77. Expenditure under this section of the Department totalled approximately \$1.3 million.

The Building Construction Program for all YTG Departments included the replacement of the Mayo School, which burnt down; the construction of a new school in Ross River; the completion of the Wolf Creek Juvenile Training Home; the construction of a Territorial Administration Building in Haines Junction; the construction of a temporary Grader Station along the Dempster Highway; a major extension to the Whitehorse Mechanical Workshop; the construction of an Airport Terminal Building at Dawson and numerous additional smaller projects. The Architectural Section again provided extensive assistance to Federal DPW in the construction of the new Territorial Administration Building in Whitehorse which is scheduled for completion during the summer of 1976. The total direct or (as far as the Territorial Administration Building is concerned) indirect expenditures for this Section amounted to approximately \$11.2 million.

The Building Maintenance Section continued to maintain all Territorially owned buildings on a year-round basis with a complement of 30 tradesmen. Emergency and routine repairs were carried out and preventative maintenance programs followed as in previous years. No major repair problems were encountered and all repainting projects were completed. This Section provided considerable assistance to the Yukon Housing Corporation in the maintenance of Staff Housing Corporation in the maintenance of Staff Housing. The maintenance of certain federally owned buildings outside of Whitehorse was carried out on a request basis. It is estimated that the total Building Maintenance expenditure will be approximately \$770,000.

The Municipal Engineering Section continued to assist the Territorial Department of Local Government in community planning, in the planning, designing and supervising of water and sewer projects and sewage treatment facilities. Projects completed in 1975-76 included construction of a sewage lagoon at Old Crow, water sewer work in Watson Lake, water and sewer installations in Porter Creek, Haines Junction, Riverdale, and Mayo. Problems were encountered due to late tender calls, shortage of water and sewer materials at the beginning of the year and unsatisfactory work done by contractors. Most of the problems have now been resolved. Surveys and planning were carried out for numerous 1976-77 projects. This Section supervised approximately \$3.8 million of work.

The installation of a VHF mountain top repeater system was continued and substantial completion should be achieved in 1976-77.

The Architectural Section and the Highway Construction Section of the Department were amalgamated into a Projects Section upon resignation of the architect in December 1975. Program forecasts for building construction for the next few years did not justify the continuation of a separate Architectural Section. Also, most major building projects are being designed by consulting architects.

The Department employed 449 casual and permanent employees at the high point in July 1975, and 252 employees at the low point in January 1976. The total O&M expenditure for the Department for 1975-76 will amount to approximately \$11.9 million.

Plans for 1976-77

Continuation of existing Highway Maintenance and Building Maintenance Programs under established procedures and guidelines. Completion of W&S projects commenced in 1975-76, completion of temporary bridge removal at the new Robert Campbell Bridge, continuation of a minor Territorial Road Improvement Program including complete repaving of the South Access Road into Whitehorse, bridge replacement of a minor bridge over the McQuesten River, paving of the first seven miles of the Campbell Highway,

assistance to Department of Local Government for new W&S projects, co-ordination of moving all YTG Departments into the new Territorial Administration Building, upgrading of airports under the MOT Arctic Airports program, supervision of minor building construction projects proposed for 1976-77. Continuation of providing all YTG Departments with professional engineering services.

Long-term Plans

Plans include the:

- continuation of upgrading of existing Yukon road system to a point where all grades, alignments and width of roads are ready for paving;
- in co-operation with and through funding by MOT, the upgrading of over a number of years all airstrips classified as Arctic B or C to a point where they comply with the standards laid down for the Program;
- construction and upgrading of airstrips, not under the MOT Arctic Airports Program, in pace with the economic development of the Yukon;
- improvement of existing highway and building maintenance procedures;
- construction and reconstruction of buildings in line with changing needs for all Territorial Departments on a planned basis.

Department of Liquor Control

Responsibilities

The Liquor Control Department regulates the importing, distribution and retailing of all alcoholic beverages within the requirements of the Liquor Ordinance and attendant Regulations. The Department, in liaison with the Yukon Liquor Board, is also responsible for the issuance of all licences and permits, and for the enforcement of the Liquor Ordinance.

Review of 1975-76

Total sales (inc. surcharge) 1974-75: \$6,823,454.89;
total sales (inc. surcharge) 1975-76: \$7,967,034.41;
increase in sales during 1975-76: 16.7 per cent.

Seven Liquor Board meetings were held during the year, as well as two Hearings of Appeal regarding suspension of licences.

The following liquor licences were issued during 1975-76:

- Cocktail lounge (Liquor), 41;
- Club (Liquor), 7;
- Tavern (Beer), 16;
- Canteen (Beer), 6;
- Dining room (Liquor), 22;
- Restaurant (Beer & Wine), 33;
- Off-premises (Liquor on hours), 53;
- Off-premises (Beer 24 hours), 33;
- Room service permits, 17;
- Special licence (Liquor), 4;
- Aircraft (Liquor), 1;
- Total, 233.

This is a decrease from 239 issued in the previous year.

Letters, newspapers advertisements, meetings with the Yukon Hotel/Motel Association and personal interviews were again used in order that licencees would realize their full responsibility with regard to the sale of liquor, especially the serving of intoxicated and underage persons.

The following permits were granted and issued:

- Special occasion, 694;
- Reception, 133.

The Empty Beer Bottle System was instituted on July 17, 1975 and has functioned smoothly. 339,358 dozen of empty beer bottles were shipped by the contractor to Pacific Brewers' Distributors Ltd. between July 17, 1975 and the end of the fiscal year.

The Whitehorse self-serve liquor store was relocated in its new premises in early December and has been well received by the public due to increased size, improved service possibilities and general atmosphere. The self-serve liquor store in Haines Junction has also been moved into the new store premises in the Territorial Building in that centre.

The Committee on Alcoholism, comprised of representatives from several Territorial departments including Liquor Control and the RCMP, has continued to function especially through its involvement with the Yukon Check Stop Program.

Plans for 1976-77

The Watson Lake liquor store will be extended in order to provide sufficient warehouse space, necessitated by greatly increased sales in this area.

The Empty Beer Bottle System will be expanded to include imported empty bottles.

An extensive review will take place of brands available and will result in listing and delisting many products according to needs and demands of the public.

Research will continue into the socio-economic results of the misuse of alcohol in relation to review of the present Liquor Ordinance.

Long-term Plans

To combine the objective of sales for profit revenue with a sense of moral obligation in order to assist in ensuring that the dignity and social well-being of the Territory's residents should not deteriorate through the misuse of alcoholic beverages.

To gradually up-grade licenced outlets in the Territory.

To add new liquor stores in areas warranting this service by virtue of population and activities.

Yukon Housing Corporation

Responsibilities

The Yukon Housing Corporation is responsible for the development, provision and management of housing programs and projects throughout the Territory, including the provision and administration of territorial government employee accommodation.

Review of 1975-76

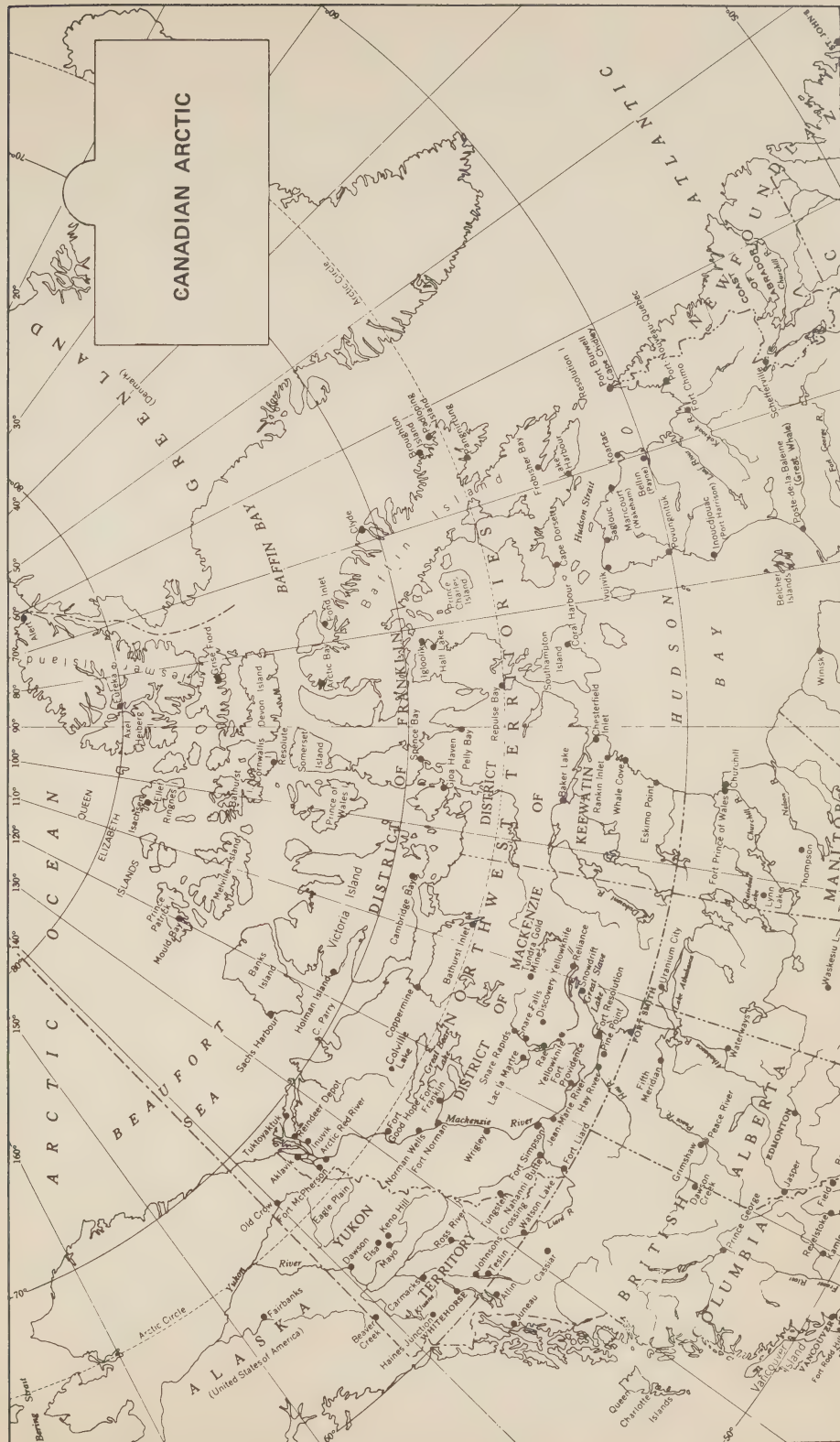
In 1975 construction was started on 30 rental/purchase housing units and 21 government employee houses. A special project of 28 semi-detached Assisted Home Ownership housing units was undertaken in Whitehorse. This construction brings the total housing stock for which the Corporation has responsibility to 539 units.

Plans for 1976-77

A building program of approximately 20 government employee housing units, 20 to 25 public housing units, 30 Assisted Home Ownership program units and commencement of a Rural and Remote Housing Program is planned.

Long-term Plans

Continue existing programs and provide new programs to ensure every Yukon resident has the opportunity to obtain standard accommodation whether through subsidized rental, rental or home ownership.



Canada. Advisor
 orthern Develop
 Government ac
 e North

DO NOT REMOVE
 SLIPS FROM THE

Y OF TORONTO

